

AN INTRODUCTION TO GUARANTEED ENERGY SAVINGS CONTRACTS

**FOR GOVERNING BODIES
(SCHOOL CORPORATIONS, LIBRARIES AND POLITICAL SUBDIVISIONS)**

**INDIANA DEPARTMENT OF COMMERCE
ENERGY AND RECYCLING OFFICE**

December 2002

PREFACE

The Indiana Department of Commerce, Energy & Recycling Office has produced this document to serve three purposes:

1. to introduce Indiana's public schools, libraries and units of local government to the concept of guaranteed energy savings contracting;
2. to provide guidance to these entities as they explore and enter into guaranteed energy savings contracts; and,
3. to explain the guidelines by which those participating in these contracts must report the resulting savings, as required by Indiana Code 36-1-12.5.

Should you have questions regarding the information contained in this document, or regarding guaranteed energy savings contracts in general, please contact the Energy & Recycling Office.

Indiana Department of Commerce
Energy & Recycling Office
One North Capitol, Suite 700
Indianapolis, IN 46204-2288

(317) 232-8940 (telephone)
(317) 232-8995 (fax)
www.indianacommerce.com/energy

TABLE OF CONTENTS

INTRODUCTION TO GUARANTEED ENERGY SAVINGS CONTRACTS	1
Why Consider a Guaranteed Energy Savings Contract?	1
Indiana GESC Program Background	1
Legislative Updates	1
Guaranteed Energy Savings Contracts	2
Indiana Code 36-1-12.5	3
Benefits of Guaranteed Energy Savings Contracting	5
Getting Started	6
Additional Information	6
INITIAL STEPS	7
Assessing Project Feasibility	7
Organizing the Project Team	9
SOLICITATION, EVALUATION, AND CONTRACT DEVELOPMENT	11
Drafting the Solicitation	11
Evaluating Proposals	13
Contract Development	13
REQUIREMENTS FOR SAVINGS REPORTING	20
Energy Cost and Operating Cost Savings Calculations	20
Savings Report	21
APPENDIX 1 Indiana Code 36-1-12.5	22
APPENDIX 2 Resources	30
APPENDIX 3 Sample Public Notice	31
APPENDIX 4 Sample Request for Qualifications	33
APPENDIX 5 Sample GESC Projects	58
APPENDIX 6 Annual Savings Report Form	77

INTRODUCTION TO GUARANTEED ENERGY SAVINGS CONTRACTS

Why Should School Corporations, Libraries And Political Subdivisions Consider A Guaranteed Energy Savings Contract?

As schools, libraries and other governing bodies consider building new, or improving existing, facilities, making energy efficiency a central part of the planning process has become more important than ever as energy costs rise and budgets decline. According to the U.S. Department of Energy, a typical school district with 4,000 students pays over \$400,000 on energy-related utilities each year. By using energy-efficient design improvements, the district could save over \$100,000 annually, money that may be used to fund expenses such as faculty positions, new equipment or additional improvements. Beyond energy and financial savings, energy improvements can have a positive impact on student and worker performance and health in schools and offices. A recent study by Heschong Mahone Group on the use of daylighting in schools showed a positive correlation between daylighting and improved student performance. More efficient lighting, better heating, air conditioning and ventilation (HVAC) systems and other measures can lead to improved performance from students and workers. By utilizing guaranteed energy savings contracts (GESCs), schools, libraries and political subdivisions in Indiana may derive the economic and performance benefits from increasing energy efficiency.

Indiana GESC Program Background

During the 1993 session of the Indiana General Assembly, Senate Enrolled Act 516 was passed and became Public Law 24-93. Among the provisions of this legislation was a change in state law (IC 36-1-12.5) governing certain construction projects by school corporations. This change in the law gave Indiana's 294 public school corporations a new method for procuring and paying for energy efficient projects and services - "guaranteed energy savings contracts." The creation of guaranteed energy savings contracts (GESCs) provided Indiana's schools with an opportunity to improve their facilities and reduce their operating costs while at the same time conserving energy and protecting the environment.

Legislative Updates

During the 1995 session of the General Assembly, two GESC bills were introduced that became law. The first, Senate Enrolled Act 214, added wording to IC 21-2-15-4 that explicitly allows a school corporation to pay for an energy savings contract entered into under IC 36-1-12.5 from its capital projects fund. The second, Senate Enrolled Act 351, expanded eligibility to enter into such contracts to include: (1) all political subdivisions (units of local government—

counties, cities, towns and townships—in addition to public school corporations), and (2) state-funded higher education institutions.

During the 1999 session of the General Assembly, additional changes were made to the state’s law pertaining to GESC. House Enrolled Act No. 1509 expanded the authority of the Indiana Department of Administration to approve GESCs entered into by all governmental bodies (state agencies, departments, etc.) and amended the IC 36-1-12.5 definition of a qualified provider to include certification and licensing requirements. In addition, House Enrolled Act No. 1985, which became Public Law 1999-227, expanded the IC 36-1-12.5 definition of a governing body to include libraries.

In the 2002 session of the General Assembly, further amendments to GESC legislation were enacted. House Enrolled Act No. 1158 (“HEA 1158”) added wording to IC 36-1-12.5 that provided clarification on the use of “stipulated” (or “assumed”) costs, namely that the methodology used to calculate the costs should be based on “industry engineering standards.” HEA 1158 also provides that the Department of Commerce shall receive a copy of the executed guarantee energy savings contract, information stating pre-project energy consumption costs, and documentation using industry engineering standards for stipulated savings and related capital expenditures. Definitions for “causally connected work,” “stipulated savings,” “industry engineering standards” and “future related capital expenditures” were also included in HEA 1158.

This document gives specific guidance for public school corporations, public libraries and units of local government only (i.e. those governed by IC 36-1-12.5). While higher education institutions may find information in this document helpful, it does not address the legal requirements related to them as set forth in IC 20-12-5.5-7. That section of the Indiana Code should be consulted for specific requirements related to energy savings contracts entered into by institutions of higher education.

Guaranteed Energy Savings Contracts

A guaranteed energy savings contract is an agreement between a qualified provider and a building owner to reduce the energy needs and operating costs of a building, or a group of buildings, by a specified amount. The main advantage of these agreements is that the building owner can participate in the project without a large upfront investment of capital. The energy and operational cost savings are used to pay for the investment.

Providers generally offer packaged services that include an energy audit, improvements in operation and maintenance procedures, capital modifications, design and engineering work, installation, monitoring and reporting of savings, maintenance, and training. The provider may also arrange the financing needed for the project. Many providers will assist in securing financing from the facility's choice of financial institutions.

Indiana Code 36-1-12.5

In order to increase access to the advantages of guaranteed energy savings contracting for schools, libraries and local governments, Chapter 12.5 was added to Indiana Code 36-1. In the past, these organizations could enter into guaranteed energy savings contracts through the specification and bid procedure. However, this method was not well suited to selecting a contractor when the work to be performed included the identification of energy conservation measures as well as their installation. As a result, few of these organizations entered into such contracts.

In simple terms, Chapter 12.5 allows governing bodies to enter into guaranteed energy savings contracts when the following conditions are met:

- The organization publishes notice of its intent to implement energy conservation measures under a guaranteed energy savings contract and requests proposals from qualified providers.
- The organization determines that the energy and related operating cost savings resulting from the project will equal or exceed the contract price over a period of not more than 10 years from the date of installation.

Figure 1 on the next page provides an overview of a participating organization's responsibilities, including procurement procedures, as required by the law. Figure 2 on the same page provides an outline of a contractor's responsibilities under the law. Both figures refer to sections of the law pertaining to specific topics. The complete text of IC 36-1-12.5 may be found in Appendix 1.

The Energy & Recycling Office can also provide a listing of businesses known to offer GESCs. Please note that mention on this list implies no endorsement, but using it to supplement the public notice process may increase the number of responses to a solicitation.

Figure 1

GOVERNING BODY RESPONSIBILITIES

Guaranteed Energy Savings Contracts (IC 36-1-12.5)

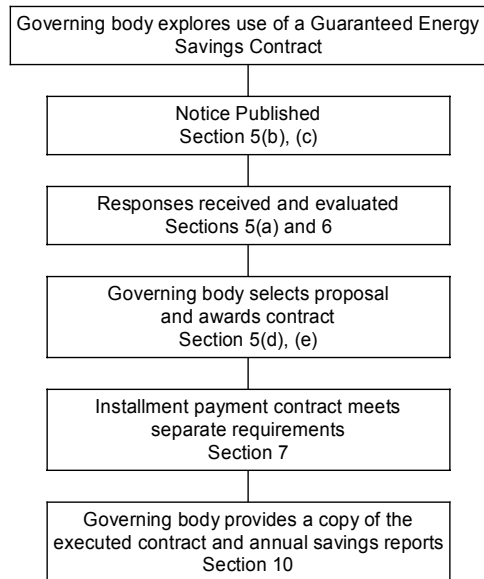
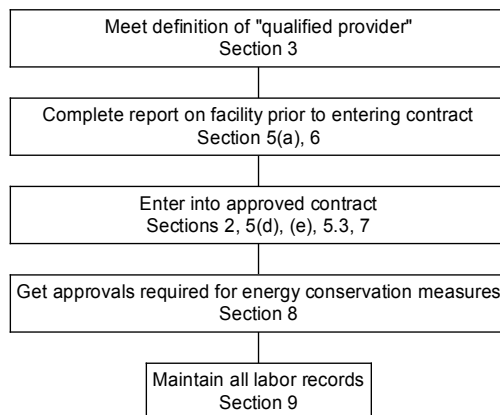


Figure 2

CONTRACTOR RESPONSIBILITIES

Guaranteed Energy Savings Contracts (IC 36-1-12.5)



Benefits of Guaranteed Energy Savings Contracting

School corporations, libraries and units of local government may be able to benefit in a number of ways by using guaranteed energy savings contracts, including the following:

- Access to financing from third parties

Third party financing offers an alternative method for funding certain buildings improvements.

- No need for upfront capital

When third party financing is used to fund the project, the governing body is relieved of the need to provide upfront capital. Thus, it receives the benefit of facility improvements and long-term energy savings without a large initial capital investment.

- Potential for reduced risk

The fact that cost savings are guaranteed reduces the risk of savings not being realized and may, therefore, help sell the project to decision makers. In addition, a positive net cash flow (savings exceed payments) over the life of the contract is a requirement.

- “One stop shopping”

The school, library or local government may procure diagnostic, design, installation, maintenance, and training services from one vendor, offering a single point of contact.

- Accelerated project implementation

Less staff time may be required to develop and oversee a single contract than would be required to develop specifications, bids, and contracts for each phase of a project.

- Incentive to maintain equipment and to train personnel

Because the provider has guaranteed the cost savings, the provider may have an incentive to ensure that the equipment is maintained in peak condition. As a result, many contracts include training of the facility's maintenance personnel to monitor equipment performance and be alert to any possible problems.

Getting Started

All of the above benefits are offered to the school, library or unit of local government by the provider at a price. Given the wide variety of services that can be included in a guaranteed energy savings contract, close consideration should be given to determining needs prior to entering into an agreement.

Sufficient time must be devoted to becoming familiar with the issues involved in guaranteed energy savings contracting. These include the methods by which these services can be procured, the creation of a contract that meets the needs and objectives of both parties, and the need to monitor the project throughout its life.

Depending on the size of the project and the availability of in-house expertise, the governing body may wish to retain independent technical expertise, such as a consulting engineer, or consult with its local utilities. Independent experts may be able to help select a provider, assure high quality workmanship and the installation of appropriate equipment, negotiate technical aspects of the contract, check compatibility of the provider's proposal with existing building systems, and assist with monitoring savings. Utilities occasionally offer financial incentives for the installation of certain energy-saving equipment or materials.

It is recommended that an independent engineer perform a technical study of the building(s) prior to the study by the provider, unless the governing body has the in-house capability to provide an equivalent study. The technical study, often referred to as an audit, will identify operations and maintenance items and capital modifications that have the potential to reduce energy consumption or energy costs. This preliminary audit can provide assurance that all appropriate energy conservation measures have been identified by the provider.

Zero-percent interest loans are available through the Indiana Department of Commerce, Energy & Recycling Office's Public Facility Energy Efficiency Program (PFEEP) to assist with the implementation of recommended capital measures in governing bodies. If you are interested in learning more about the PFEEP, contact the Energy & Recycling Office at (317) 232-8940.

Additional Information

The next section of this document will help you assess whether your facility is a good candidate for a GES. Later sections will provide information on solicitation and selection, contract development, and savings reporting. In addition to this document, your organization may wish to consult a number of other resources to learn more about GES. Appendix 2 contains a list of additional sources of information. Prior to entering into such a contract, a school corporation, library or unit of local government should consult with legal counsel to ensure that all applicable laws, rules, and regulations are followed.

INITIAL STEPS

Assessing Project Feasibility

After learning about guaranteed energy savings contracts and the basic issues involved in using them, the next step is to determine whether a guaranteed energy savings contract is feasible for your organization. The following questions may help you to assess project feasibility. Generally, the more positive the answers to the following questions, the better suited an organization is for participation in a guaranteed energy savings contract.

On Energy Use

Does the facility consume more energy than it should for its size and use?

Energy savings of 15% to 20% are common in facilities that have not yet explored energy efficiency. When an energy audit is performed, two useful numbers—the Energy Cost Index and the Energy Use Index—can be calculated by the auditor. The Energy Cost Index is expressed in dollars per square foot per year (\$/ft²/yr) while the Energy Use Index is given in British Thermal Units per square foot per year (Btu/ft²/yr).

The Energy Cost and Energy Use Indices can be used for comparisons with other facilities, with pre- and post-retrofit consumption in the same building, or with Indiana averages. For example, elementary and secondary schools that participated in the state's Institutional Conservation Program had average Energy Cost and Energy Use Indices of \$0.90/ft²/yr and 90,000 Btu/ft²/yr before energy conservation measures were installed. (The site-based conversion factor of 3,413 Btu per kWh was used to create the Energy Use Index above.) Note that these numbers are just one set against which to compare your own facilities. Schools and other facilities with indices lower than these may still be good candidates for energy efficiency measures. Finally, these numbers will vary according to facility use, location, and energy prices. For these reasons, they should not be taken as an absolute measure of energy savings potential.

Those who wish to calculate Energy Cost and Energy Use Indices for their facilities can obtain assistance by contacting the Energy & Recycling Office at (317) 232-8940.

Has facility use, occupancy, and energy consumption been stable over the past few years? Greater stability will make it easier to develop an accurate baseline of energy use against which savings can be measured. If significant changes in use patterns have occurred, it will be more difficult to obtain a meaningful baseline. Independent technical expertise may be helpful in such a case.

On Energy Audits

Has an energy audit been performed to identify opportunities to save energy?

Energy audits range from walk-throughs of a facility performed by in-house personnel to comprehensive engineering audits using sophisticated computer programs. Each method has some merit in identifying energy savings opportunities.

Should we perform an energy audit if we haven't already? The provider will perform some type of energy audit as part of a guaranteed energy savings contract, but an independent energy audit should also be considered. The options for obtaining an independent energy audit include using in-house personnel, hiring an independent engineer or architect, or approaching your local utility. The cost of the provider's energy audit will be included in the guaranteed energy savings contract. While obtaining an independent audit may seem like paying for the same service twice, it assures the school, library or unit of local government of an objective, unbiased assessment of energy saving opportunities, while a provider's audit may reflect specific products or services that the provider seeks to sell. As an alternative, an independent review of the provider's audit by a technical expert may provide a second opinion without duplicating the entire audit.

The following energy savings opportunities should be explored in an audit:

Operation and maintenance measures

These are low cost and no cost procedures, including items as simple as scheduled cleaning of lamps and fixtures or as complicated as recalibration of controls on a boiler. A provider's audit should identify operation and maintenance savings. If this is not part of the provider's audit, or if you would like to assess operation and maintenance savings opportunities for your own facilities, you may request a comprehensive Operations and Maintenance Checklist from the Energy & Recycling Office at (317) 232-8940.

Recommendations for capital expenditures

The energy conservation measures recommended in an audit should each be presented separately to allow the school, library or local government to determine which of the energy conservation measures to implement. The cost, the projected energy savings, energy cost savings, and operating cost savings for each separate measure are essential to determining which measures should be implemented. Criteria such as simple payback and/or life-cycle costs may also be used to select appropriate energy conservation measures. Under IC 36-1-12.5, the energy conservation measures included under a guaranteed energy savings contract must generate savings sufficient to

cover the costs of the project within 10 years or the average life of the measures, whichever is less.

On Funding

Is funding for energy efficiency projects limited? As discussed in the previous section, many of the benefits of a guaranteed energy savings contract come from its unique financing opportunities.

On Current Facility Condition

Can energy conservation measures be implemented without extensive repairs to the facility and/or its equipment? Under the recent amendments to IC 36-1-12.5 (HEA 1158), repairs to a facility defined as “related capital expenditures” are acceptable if they are causally connected to the energy conservation measure(s). IC 36-1-12.5-12 also allows up to 15% of the total GESC to be improvements that are not causally connected to energy conservation measures if: 1) the improvement is required in order to meet a law, a rule or an ordinance or 2) there is an “economic advantage” to the governing body in implementing the improvement. Structural repairs of a facility, however, are not energy conservation measures.

For example, the addition of insulation to the roof or walls of a building may be covered under a guaranteed energy savings contract. Repairs or replacement of the roof or walls, if causally connected or under 15% of the total contract cost, may also be included.

It remains the responsibility of the school, library or unit of local government and provider to make any repairs or operating modifications necessary to bring a facility into compliance with applicable health and safety codes. If these modifications result in increased energy consumption, adjustments must be made to the facility’s energy use baseline prior to accounting for any energy conservation measures.

On Future Facility Use

Is the facility’s occupancy and use expected to remain stable over the life of the contract? A facility that is used less or used differently in future years may not see the full benefits of the energy conservation measures implemented.

Organizing the Project Team

Once a building has been deemed a good candidate for a guaranteed energy savings contract, the next step is to organize a project team. The objective is to identify individuals in the organization who will make decisions regarding the development of the guaranteed energy savings contract. The following tasks should be included:

Identify A Project Manager

One person should be assigned responsibility for guiding the project through the various phases of development and implementation. The project manager should possess administrative and/or technical skills to carry out the role. In most organizations, this person would be either the business manager or the director of facilities.

Assemble The Project Team

The project manager will need to assemble a project team. Representatives from buildings and grounds, finance, legal, administration, and the affected facility's manager are typically included in the process. The project manager may also wish to enlist the help of outside counsel and engineers.

Identify Sources Of Information On Guaranteed Energy Savings Contracting.

This guide should serve as a first step in assembling information on guaranteed energy savings contracting. The Indiana Department of Commerce, Energy & Recycling Office also provides free consultation on the guaranteed energy savings contracting process. Additional sources of information are listed in Appendix 2.

SOLICITATION, EVALUATION, AND CONTRACT DEVELOPMENT

Once the project team has been assembled, it should begin to acquaint itself with basic guaranteed energy savings contract issues, including the process of soliciting, selecting, and contracting with a provider. IC 36-1-12.5, Section 5 sets forth the statutory requirements for this process as it relates to governing bodies (i.e., schools, libraries and units of local government). This handbook addresses specific requirements for these institutions only. For statutory requirements related to public institutions of higher education, refer to IC 20-12-5.5-7.

Drafting The Solicitation

The primary goal of the solicitation is to generate several high quality proposals that can be compared to select the best option. A secondary goal is to assist with contract negotiations by identifying key issues early in the process.

Public Notice

IC 36-1-12.5 requires that, at a minimum, school corporations, libraries and units of local government must publish notice, as set forth in section 5 (b) and (c). The public notice should request that qualified providers propose energy conservation measures to the organization by a specified date and time (see Appendix 3 for a sample public notice). Competition among providers will improve the organization's bargaining position and will assist with securing favorable terms.

In addition to the public notice, a school, library or local government may also choose to mail solicitations to specific providers. The Energy & Recycling Office can provide a listing of businesses known to offer guaranteed energy savings contracts. While mention on this list implies no endorsement, using it to supplement the public notice process may increase the number of responses to a solicitation.

A governing body may wish to make its solicitation more specific by using a Request for Qualifications (RFQ) or a Request for Proposals (RFP), both of which are explained in greater detail below. Whatever solicitation method is used, the organization must comply with all applicable requirements as established by the Indiana Code, State Board of Tax Commissioners, State Board of Accounts, and other appropriate governing bodies.

Request for Qualifications

A Request for Qualifications seeks information on a provider's experience, qualifications, general procedures, and standard contract approaches (i.e. a Statement of Qualifications). A Request for Qualifications does not seek proposals for a specific package of energy conservation measures or for a specific method or amount of compensation. After reviewing the Statements of

Qualifications received, the solicitor chooses a provider and requests that the provider complete a report as specified in IC 36-1-12.5, Section 6. If this report is acceptable, the solicitor begins contract negotiations with the provider. See Appendix 4 for a sample Request for Qualifications.

The Request for Qualifications does not require providers to make a large investment in proposal preparation and should, therefore, result in the solicitor receiving responses from several providers. However, Statements of Qualifications do not allow a detailed comparison of costs and services among providers. This approach is best suited for situations where the capital investment involved is expected to be modest, and the project team expects possible energy conservation measures to be limited in number and complexity. For additional assistance with the Request for Qualifications process, the solicitor may wish to contact its professional association or the Qualification-Based Selection Indiana Coalition at (317) 637-3316. The QBS Coalition is associated with the Consulting Engineers of Indiana, a statewide association of consulting engineering firms, and was created to assist organizations with procurement based on qualifications rather than on lowest bids.

Request for Proposals

Another approach, called a Request for Proposals, is generally a Request for Qualifications with the additional requirement that respondents provide a specific list of proposed energy conservation measures and services including estimated costs and savings. In order to prepare such a proposal, a provider must make a site visit to conduct a technical analysis of the building.

This approach increases the cost of preparing a response and, therefore, may decrease the number of responses a solicitor receives. It may also result in diverse technical proposals, adding to the length and complexity of the evaluation process. However, this approach allows the solicitor to more aggressively pursue the best cost and service combination, and to review a wide variety of approaches designed to meet its objectives.

A Request for Proposals is best suited for projects that are large, complex, or unique and where the range of possible energy conservation measures is broad enough to justify reviewing specific proposals. A Request for Proposals may be either a one-step or a two-step process. In the two-step process, a Request for Qualifications is distributed broadly and the responses are then used to create a “short list” of providers that are invited to respond to a Request for Proposals. This reduces the number of detailed proposals the solicitor may have to evaluate. The one-step process simply involves distributing a Request for Proposals and evaluating all responses.

Solicitation Suggestions

Regardless of the specific method chosen to solicit guaranteed energy savings contract proposals, it is up to the school, library or local government to make its project objectives and its desired technical and financial arrangements clear to prospective providers through the solicitation. However, the solicitation should not be so prescriptive as to discourage qualified firms from responding. In striking this balance, the solicitor should keep in mind that the greater the specificity sought in the proposal, the more costly the proposal will be to prepare. This will have the effect of reducing the number of providers answering a solicitation and, therefore, limit the solicitor's choices. Also, the more prescriptive the solicitation is in terms of specific technical and financial requirements, the less opportunity the provider has to seek imaginative solutions. Finally, the solicitor should always reserve the right to reject any and all proposals in the event that none are found to be responsive.

Governing bodies should consider sharing and requesting the information set forth in the model Request for Qualifications included as Appendix 4 in this document. This model has been provided to help organizations create a solicitation document designed to achieve their objectives given their specific circumstances and legal requirements. Included with the model Request for Qualifications are: a list of evaluation criteria, a list of project terms and conditions, a provider profile form, a format for both the provider's qualifications and approach to the project, and a facility profile format. All of these items may be of use to a school, library or local government as it develops its own solicitation whether it be a Request for Qualifications, a Request for Proposals, or some other instrument.

Evaluating Proposals

When evaluating a guaranteed energy savings contract proposal, the following areas should be examined: project management capabilities; technical proficiency and approach; financial stability and financing packages offered; and fairness and flexibility of legal approach. A more detailed listing of items under these four broad areas is included with the model Request for Qualifications in Appendix 4 of this document. In addition to using the responses of the provider and its own experience, a solicitor should make judicious use of business references and other contacts who have had experience with these types of contracts.

Contract Development

Before the Contract

Before discussing contract development, it is important to note that IC 36-1-12.5 allows political subdivisions to enter into guaranteed energy savings contracts only after reviewing a report from the provider and determining that (1) the savings resulting from the project will cover the project cost over the lesser of 10 years or the life of the equipment and (2) the provider will guarantee the project's

savings. The Code also requires that this report be compiled by the provider before installing equipment in, making modifications to, or remodeling a building or complex of buildings.

This report must include estimates of: (1) all costs attributable to the work including the costs of design, engineering, installation, maintenance, repairs, or debt service; and (2) the amounts by which energy consumption and operating costs will be reduced. The report must also contain a listing of the contractors and subcontractors to be used by the provider with respect to the energy conservation measures.

Terms and Conditions

Contract forms may be supplied by a provider or may be drafted by the political subdivision's counsel.

Important elements of the agreement include: the energy savings guarantee; provider services and responsibilities; political subdivision responsibilities; standards of comfort; energy consumption, energy cost, and operating cost savings calculations; and provider compensation. Some items may be negotiable and both parties must approve and accept the final contract.

Listed below are terms and conditions that may be included in the contract. They are intended for discussion purposes only, except where reference is made to IC 36-1-12.5 for specific statutory requirements. For further suggestions on this subject, see the Project Terms and Conditions section of the model Request for Qualifications in Appendix 4 (Attachment D).

Energy Audit

In most situations, the report that the political subdivision uses to determine its ability to enter into a contract under IC 36-1-12.5 Section 6 will be the only energy audit of the facility that is completed. Additional information may be required by the organization in its Public Notice, Request for Qualifications, Request for Proposals, etc.

If, however, an additional audit will be completed after the contract has been entered into, the specific cost and content of this audit should be specified in the contract. The contract should also clarify whether information from the first or second audit will be used in the course of implementing the energy conservation measures (for determining whether the savings guarantee has been met, etc.).

Savings Guarantee

As required by IC 36-1-12.5, the provider must guarantee that the savings in energy and operating costs due to the energy conservation measures will cover the costs of the payments for the measures. If the savings are less than the guaranteed

savings, the guaranteed energy savings contract should provide that the provider reimburse the governing body for the difference.

It is important to note that the savings must be reductions in the organization's costs and must also be causally connected to an energy conservation measure.

A Word on Operating Cost Savings

Under a guaranteed energy savings contract, much of the project cost should ideally be paid for through savings in energy costs. However, improvements designed to reduce energy consumption also reduce operating costs, including future avoided costs (see IC 36-1-12.5-1, Section 6). The governing body may include these operating cost savings in the guaranteed energy savings contract. Operating cost savings, in addition to future avoided costs, should be identified in the baselines set at the beginning of the contract process.

Governing bodies should be careful when dealing with operating cost savings. Ideally, operating cost savings should be included in a guaranteed energy savings contract only when they (1) are the direct, causally connected, result of an energy conservation measure, (2) represent a reduction in actual costs, and (3) result from the normal operation of the school facility or structure.

Provider's Services

The contract should describe each of the services to be furnished by the provider in connection with the project, including when such services are to be performed.

- **Design, Engineering, and Construction Services:** The most fundamental responsibility is to design, obtain, install, and begin operation of project equipment. The contract should accurately describe the equipment and systems to be used in the project. This should be done in sufficient detail to avoid any misunderstanding about the equipment to be provided. Detailed engineering drawings of all existing and modified conditions associated with the project should be provided within thirty days of the completed contract.
- **Training Services:** If the customer is to use the project equipment to full advantage, the facility staff must become familiar with the equipment and be able to operate the equipment without outside assistance. The provider should oversee training courses and provide written operating procedures for equipment.

- **Maintenance and Repair Services:** The contract should make clear how the equipment is to be operated, maintained, and repaired during the project. Generally, the customer undertakes responsibility for day-to-day operation of the project equipment, while the provider is responsible for servicing the equipment. The contract should also indicate under what circumstances, if any, the governing body will be responsible for repair or maintenance costs. If software is included with an energy conservation measure, the contract should clearly state that all documentation, updates, and modifications will be provided for the duration of the agreement and possibly beyond it.
- **Reporting Requirements:** The school, library or local government may want the provider to be responsible for the reporting requirements required by IC 36-1-12.5. The section titled “Requirements for Savings Reporting” in this document discusses these requirements in greater detail.
- **Debt Service:** The provider may offer financing to cover costs of the project.

Permits and Approvals

The provider generally assumes primary responsibility for securing all permits and approvals needed to install and operate the project equipment. IC 36-1-12.5, Section 8 sets forth the requirements regarding permits and approvals for work done under a guaranteed energy savings contract.

Coordination During Installation

The provider and governing body should coordinate the installation of project equipment. Equipment installation should not interfere with regular school or business activities without prior approval.

Other Documents

The contents of the proposal solicitation and chosen response may be incorporated as part of the final contract. In this way, providers will be required to stand by both the promises made and the work that was conducted to secure the governing body’s business. If this is done, provisions for modifying items in the response and dealing with conflicts between it and the contract should also be included.

Warranties

All equipment installed as part of the project should be protected by appropriate written warranties covering all parts and performance. The provider should deliver copies of the warranties to the customer for inspection and approval, pursue rights and remedies against manufacturers and sellers in the event of

equipment malfunction, and use best efforts not to void any warranties related to the project equipment.

Operational Responsibilities of the Governing Body

The contract should describe the responsibilities of the school, library or local government relating to the operation of the project equipment.

- **Location and Access:** The governing body must provide space for, and protection of, project equipment. It must also provide access to the premises for the provider to perform any function related to the contract during regular business hours or other reasonable hours.
- **Operation of Project Equipment:** The governing body is generally responsible for the day-to-day operation of the project equipment. This includes following agreed-upon operating procedures. It is also usually prohibited from moving, removing, or altering the project equipment without the provider's prior approval.
- **Energy Consumption Reporting:** If the governing body will be monitoring its energy usage and cost savings, it should agree to furnish to the provider within a specified period (e.g., 10 to 15 days after receipt) copies of all relevant energy consumption data needed to calculate the reduction in energy consumption achieved for each appropriate time period during the term of the contract. This usually involves little more than forwarding copies of the affected facility's monthly utility bills.
- **Operating Cost Reporting:** If operating costs account for a portion of the savings guaranteed by the provider, and if the governing body will not be monitoring these costs and savings, it should agree to furnish the provider with all information needed to calculate the operating cost savings achieved for each appropriate time period during the term of the contract.
- **Reporting Changes in Energy Use:** The governing body must notify the provider in writing when actual or proposed material changes affect normal energy consumption. Material changes are discussed below.

Standards of Comfort

The contract should clearly describe the standards of service and comfort to be met by the project (i.e. requirements for heating, cooling, hot water, lighting, etc., during certain hours). The standards should be realistically set and subject to change only by written agreement of both parties.

Energy Consumption and Operating Cost Baselines

The contract should include a detailed definition of the baseline from which energy cost and operating cost savings are to be calculated. The baseline will be created from the historical energy consumption or operating costs before the energy conservation measures are installed. The establishment of the baselines

should consider and account for recent changes in the structure, building function, occupancy, etc., if any.

Calculation of Savings

The contract should provide a complete description of all procedures for energy and operating cost savings calculations. This description should detail the methods, assumptions, and figures used to (1) create the estimates of all energy consumption, energy cost, and operating cost savings guaranteed under the contract, and (2) periodically determine whether the estimated savings are being realized. This section should also address the energy consumption, energy cost, operating cost, and other data needed from the governing body and detail how adjustments will be made to account for items such as weather and days in the billing cycle.

Material Changes

The contract must contain a mutually agreeable clause that accommodates both parties when material changes occur that affect the project's savings. Material changes are defined as conditions that differ from normal operations and affect the facility's energy use or operating costs such as changes in hours of operation, occupancy levels, or manner of use.

Malfunctions and Emergencies

Over the life of the contract, incidents may occur that impact the savings from the project. The contract should include provisions for restoring project equipment to design conditions and for dealing with the financial impacts that may arise as a result of these incidents.

Commencement Date and Terms

The commencement date of the energy and operating cost savings guarantee should not occur until after the provider has notified the governing body in writing that it has begun operation or completed installation of all the project's energy conservation measures. The governing body should also retain the right to inspect and accept the installation and operation of the measures.

Contractor's Compensation

The contract should describe the compensation the provider is to receive for its services under the contract, how that compensation is to be calculated, at what intervals it is to be paid, and for how long. IC 36-1-12.5, Section 5(d)(1) requires that, if an installment payment method is used, the payment term from the date of installation may not exceed the lesser of ten years or the average life of the energy conservation measures. In addition, section 5(d)(2) requires that the savings in energy and operating costs must cover the costs of the payments for the project.

If the guaranteed savings are not met, the provider must reimburse the school or local government for the difference between the actual and guaranteed savings.

Bonding

IC 36-1-12.5, Section 3 (2) requires that the provider submit a performance bond to the governing body to ensure the provider's performance of its obligations over the term of the contract.

Liability for Damages and Other Contingencies

The contract should specify what happens if project equipment is damaged, casualties or other contingencies occur, or the parties do not perform as promised. Provisions may be included to address property/casualty/indemnification conditions beyond the control of the parties, events of default, and remedies upon default.

Terms Particular to Governing Bodies

The contract should contain any terms or provisions that are needed to address legal issues specific to public schools, libraries and units of local government in Indiana.

General Terms and Conditions

The contract should address certain procedural and other general issues, such as assignment provisions and applicable law.

List of Sample Contract Schedules

Certain items in the contract may be lengthy and are usually put on a separate schedule or addendum to the contract. These schedules may include the following: (a) equipment description; (b) savings guarantee; (c) provider compensation; (d) scheduled equipment service and maintenance responsibilities of the provider; (e) projected financial performance; (f) savings calculation formulas; (g) construction and equipment installation schedule; (h) standards of comfort; (i) customer operations and maintenance responsibilities; and (j) baselines for energy consumption and operating costs.

REQUIREMENTS FOR SAVINGS REPORTING

The final task in the guaranteed energy savings contract process is monitoring and reporting the actual savings resulting from the project. This section provides a brief discussion on estimating energy savings, energy cost savings, and operating cost savings, and then sets forth the guidelines for reporting cost savings achieved under a guaranteed energy savings contract as required by law. *These guidelines supercede all previous versions and should be used for reporting on all projects performed under IC 36-1-12.5.*

Energy Cost and Operating Cost Savings Calculations

The first step in both energy cost and operating cost savings calculations is the creation of a baseline. The baseline reflects the facility's energy use, energy costs, or operating costs prior to the installation of the project's energy conservation measures. The costs that the facility incurs after implementation of the measures will then be compared to the baseline in order to determine if savings projections—and guarantees—have been met.

However, before actual figures can be compared to baseline figures, steps must be taken to account for factors which, over time, can mask the true savings realized by the energy conservation measures. For example, savings in energy costs may not be readily apparent when comparing one year's energy bill to the previous year's because of changes in factors such as weather, energy prices, or facility use. For this reason, the actual energy consumption, energy cost, and operating cost figures may need to be adjusted so that accurate and valid comparisons can be made. These adjustments typically cover normalization for the number of days in a month, normalization of differences in outdoor temperature, changes in facility occupancy and use, additions or deletions of energy-using equipment, changes in energy prices, and changes in labor rates.

As the financial analysis of the project will use the guaranteed savings to determine the governing body's projected "income" from the project, it is extremely important to understand how the savings in energy, energy costs, and operating costs will be calculated. For example, if a provider was able to meet its guaranteed cost savings on paper while a serious shortfall in real cost savings occurred, the institution could end up paying out much more than it saved over the life of the contract. This would lead to problems with future budgets. For this reason, serious consideration should be given to retaining an independent consultant if the organization's staff does not have a strong understanding or specific expertise in the area of energy, energy cost, and operating cost savings calculation.

Savings Report

Under the most recent amendments to IC 36-1-12.5-10, a governing body participating in a guaranteed energy savings contract is required to provide a copy of the executed guaranteed energy savings contract, pre-project energy costs and documentation of stipulated costs to the Indiana Department of Commerce, Energy & Recycling Office, not more than sixty (60) days after the date of execution of the contract. In the event that the contract is amended following execution, the sixty (60) day requirement will be applied to the date of execution for the new contract.

The governing body is still required to report the savings resulting from the contract annually to the Energy & Recycling Office. This annual reporting is required for the life of the contract and is accomplished by submitting a completed Annual Savings Report form. This form can be found in Appendix 6. The report is to be submitted to the Energy & Recycling Office no later than 60 days after the end of each year the savings guarantee is in force. Signatures from both the service provider representative and an authorized representative from the governing body will be required.

The reporting form has been modified to provide more comprehensive information to the Energy & Recycling Office, while remaining straightforward for governing bodies and providers. Should you have any questions about the savings reporting process, please contact the Energy & Recycling Office at (317) 232-8940.

APPENDIX 1

Indiana Code 36-1-12.5

The version of IC 36-1-12.5 presented here took effect on March 21, 2002. For the language in effect preceding this date, consult the appropriate edition of the Indiana Code and Indiana Code Supplement.

Indiana Code 36-1-12.5
Guaranteed Energy Savings Contracts and Energy Efficiency Programs

IC 36-1-12.5-0.5

Section 0.5. As used in this chapter, “actual savings” includes stipulated savings.

IC 36-1-12.5-0.7

Section 0.7. As used in this chapter, “causally connected work” means work that is required to properly implement an energy conservation measure.

IC 36-1-12.5-1

Sec. 1. As used in this chapter, "energy conservation measure" means a school facility alteration or an alteration of a structure (as defined in IC 36-1-10-2) designed to reduce energy consumption costs or operating costs, including the following:

- (1) Providing insulation of the school facility or structure and systems within the school facility or structure.
- (2) Installing or providing for window and door systems, including:
 - (A) storm windows and storm doors;
 - (B) caulking or weatherstripping;
 - (C) multi-glazed windows and doors;
 - (D) heat absorbing or heat reflective glazed and coated windows and doors;
 - (E) additional glazing;
 - (F) the reduction in glass area; and
 - (G) other modifications that reduce energy consumption.
- (3) Installing automatic energy control systems.
- (4) Modifying or replacing heating, ventilating, or air conditioning systems.
- (5) Unless an increase in illumination is necessary to conform to Indiana laws or rules or local ordinances, modifying or replacing lighting fixtures to increase the energy efficiency of the lighting system without increasing the overall illumination of a facility or structure.
- (6) Providing for other energy conservation measures that reduce energy consumption or reduce operating costs, including future:
 - (A) labor costs;
 - (B) costs for contracted services; and
 - (C) related capital expenditures.

As added by P.L.24-1993, SEC.6. Amended by P.L.208-1995, SEC.3.

IC 36-1-12.5-1.5

Sec. 1.5. As used in this chapter, "governing body" means the following:

- (1) With respect to school corporations, the governing body (as defined in IC 20-10.1-1-5).
- (2) With respect to a public library, the library board (as defined in IC 20-14-1-2).
- (3) With respect to a library described in IC 20-14-7-6, the trustees of the library.
- (4) With respect to other political subdivisions, the legislative body (as defined in IC 36-1-2-9).

As added by P.L.208-1995, SEC.4. Amended by P.L.227-1999, SEC.12.

IC 36-1-12.5-2

Sec. 2. As used in this chapter, "guaranteed energy savings contract" refers to a contract entered into under this chapter, in which a qualified provider enters into an agreement with the governing body to:

- (1) evaluate and recommend to the governing body energy conservation measures; and
- (2) provide for the implementation of at least one (1) energy conservation measure.

As added by P.L.24-1993, SEC.6. Amended by P.L.208-1995, SEC.5.

IC 36-1-12.5-2.5

Sec. 2.5. As used in this chapter, "industry engineering standards" includes the following:

- (1) Lifecycle costing.
- (2) The R.S. Means estimating method developed by the R.S. Means Company.
- (3) Historical data.
- (4) Manufacturer's data.
- (5) American Standard Heating Refrigeration Air Conditioning Engineers (ASHRAE) standards.

IC 36-1-12.5-3

Sec. 3. (a) As used in this chapter, "qualified provider" means the following:

- (1) Before July 1, 1999, the term means a person that satisfies both of the following:
 - (A) The person is experienced in the design, implementation, and installation of energy conservation measures.
 - (B) The person submits to the school corporation or political subdivision a performance bond to ensure the qualified provider's faithful performance of the qualified provider's obligations over the term of the guaranteed energy savings contract.
- (2) After June 30, 1999, the term means a person that satisfies all of the following:
 - (A) The person is experienced in the design, implementation, and installation of energy conservation measures.
 - (B) The person is certified and meets the requirements of IC 4-13.6-4. The person's response to the request for proposals must include a copy of the person's certificate of qualification issued under IC 4-13.6-4.
 - (C) The person provides energy conservation engineering services by a professional engineer licensed under IC 25-31 who is under the person's direct employment and supervision. The person's response to the request for proposals must include the license number of each professional engineer employed by the person to satisfy the requirement of this clause.
 - (D) The person provides:
 - (i) monitoring for the facility performance guarantee; and
 - (ii) service personnel under the person's direct employment and supervision; for the duration of the contract's guarantee.
 - (E) The person performs at least twenty percent (20%) of the work (measured in dollars of the total contract price) with its own workforce.
 - (F) The person submits to the school corporation or political subdivision a performance bond to ensure the qualified provider's faithful performance of the qualified

provider's obligations over the term of the guaranteed energy savings contract.

(b) For purposes of a guaranteed energy savings contract entered into before July 1, 1999, a person who was a qualified provider under subsection (a)(1) at the time the contract was entered into remains a qualified provider for that contract after June 30, 1999. If the person enters into a guaranteed energy savings contract after June 30, 1999, the person must satisfy the requirements of subsection (a)(2) to be considered a qualified provider.

As added by P.L.24-1993, SEC.6. Amended by P.L.208-1995, SEC.6; P.L.58-1999, SEC.10.

IC 36-1-12.5-3.5

Sec. 3.5. As used in this chapter, "related capital expenditures" includes capital costs that:

- (1) the governing body reasonably believes will be incurred during the contract term;
- (2) are part of or are causally connected to the energy conservation measures being implemented; and
- (3) are documented by industry engineering standards.

IC 36-1-12.5-3.7

Sec. 3.7. As used in this chapter, "stipulated savings" are assumed savings that are documented by industry engineering standards.

IC 36-1-12.5-4

Sec. 4. As used in this chapter, "utility energy efficiency program" refers to an energy efficiency program that:

- (1) includes an energy conservation measure;
- (2) is established by a public utility (as defined in IC 8-1-8.7-2); and
- (3) is undertaken pursuant to this chapter.

As added by P.L.24-1993, SEC.6.

IC 36-1-12.5-5

Sec. 5. (a) The governing body may enter into an agreement with a public utility to participate in a utility energy efficiency program or enter into a guaranteed energy savings contract with a qualified provider to reduce the school corporation's or the political subdivision's energy consumption costs or operating costs if, after review of the report described in section 6 of this chapter, the governing body finds:

(1) that the amount the governing body would spend on the energy conservation measures under the contract and that are recommended in the report is not likely to exceed the amount to be saved in energy consumption costs and other operating costs over ten (10) years from the date of installation if the recommendations in the report were followed; and

(2) in the case of a guaranteed energy savings contract, the qualified provider provides a written guarantee as described in subsection (d)(2).

(b) Before entering into an agreement to participate in a utility energy efficiency program or a guaranteed energy savings contract under this section, the governing body must publish notice under subsection (c) indicating:

(1) that the governing body is requesting public utilities or qualified providers to propose energy conservation measures through either a utility energy efficiency program or a guaranteed energy savings contract; and

(2) the date, the time, and the place where proposals must be received.

(c) The notice required by subsection (b) must:

(1) be published in two (2) newspapers of general circulation in the county where the school corporation or the political subdivision is located;

(2) be published two (2) times with at least one (1) week between publications and with the second publication made at least thirty (30) days before the date by which proposals must be received; and

(3) meet the requirements of IC 5-3-1-1.

(d) An agreement to participate in a utility energy efficiency program or guaranteed energy savings contract under this section must provide that:

(1) all payments, except obligations upon the termination of the agreement or contract before the agreement or contract expires, may be made to the public utility or qualified provider (whichever applies) in installments, not to exceed the lesser of ten (10) years or the average life of the energy conservation measures installed from the date of final installation; and

(2) in the case of the guaranteed energy savings contract:

(A) the savings in energy and operating costs due to the energy conservation measures are guaranteed to cover the costs of the payments for the measures; and

(B) the qualified provider will reimburse the school corporation or political subdivision for the difference between the guaranteed savings and the actual savings; and

(3) payments are subject to annual appropriation by the fiscal body of the school corporation or political subdivision and do not constitute an indebtedness of the school corporation or political subdivision within the meaning of a constitutional or statutory debt limitation.

(e) An agreement or a contract under this chapter is subject to IC 5-16-7.

As added by P.L.24-1993, SEC.6. Amended by P.L.212-1995, SEC.2; P.L.208-1995, SEC.7.

IC 36-1-12.5-5.3

Sec. 5.3. (a) This section applies only to a guaranteed energy savings contract entered into after June 30, 1999.

(b) A qualified provider may enter into a subcontract:

(1) with a value of more than one hundred fifty thousand dollars (\$150,000); and

(2) for the performance of any part of a guaranteed energy savings contract; only if the subcontractor is certified under IC 4-13.6-4.

As added by P.L.58-1999, SEC.11.

IC 36-1-12.5-5.5

Sec. 5.5. IC 6-1.1-20 does not apply to an agreement to participate in a utility energy efficiency program or guaranteed energy savings contract entered into under this chapter.

As added by P.L.212-1995, SEC.3.

IC 36-1-12.5-6

Sec. 6. (a) Before the public utility or the qualified provider may install equipment in, make modifications to, or remodel a building or complex of buildings under a utility energy efficiency program or a guaranteed energy savings contract, the public utility or the qualified provider (whichever applies) must issue a report that includes estimates for the following:

(1) All costs attributable to the work stipulated in the agreement or the contract, including the costs of design, engineering, installation, maintenance, repairs, or debt service.

(2) The amounts by which energy consumption, energy costs and operating costs will be reduced.

(b) The report must also contain a listing of contractors and subcontractors to be used by the public utility or the qualified provider with respect to the energy conservation measures.

As added by P.L.24-1993, SEC.6.

IC 36-1-12.5-7

Sec. 7. If the governing body enters into an installment payment contract for the purchase and installation of energy conservation measures under this chapter, the balance of the payments must be paid in installments not to exceed the lesser of ten (10) years or the average life of the energy conservation measure installed from the date of final installation. Payments under an installment payment contract are subject to annual appropriation by the fiscal body of the school corporation or political subdivision and do not constitute an indebtedness of the school corporation or political subdivision within the meaning of a constitutional or statutory debt limitation.

As added by P.L.24-1993, SEC.6. Amended by P.L.212-1995, SEC.4; P.L.208-1995, SEC.8.

IC 36-1-12.5-8

Sec. 8. Energy conservation measures installed under a utility energy efficiency program or a guaranteed energy savings contract must be approved by the following:

(1) The state department of health, office of the state fire marshal, office of the state building commissioner, and any other state agency designated by statute.

(2) An architect or engineer licensed under IC 25-4 or IC 25-31 if the energy conservation measures have a cost of more than fifty thousand dollars (\$50,000).

As added by P.L.24-1993, SEC.6.

IC 36-1-12.5-9

Sec. 9. (a) The contractor and each subcontractor engaged in installing energy conservation measures under a guaranteed energy savings contract shall keep full and accurate records indicating the names, classifications, and work performed by each worker employed by the respective contractor and subcontractor in connection with the work, together with an accurate record of the number of hours worked by each worker and the actual wages paid.

(b) The payroll records required to be kept under this section must be open to inspection by an authorized representative of the governing body or the department of

labor.

As added by P.L.24-1993, SEC.6. Amended by P.L.208-1995, SEC.9.

IC 36-1-12.5-10

Sec. 10. The governing body shall:

- (1) provide to the department of commerce not more than sixty (60) days after the date of execution of the guaranteed energy savings contract:
 - (a) a copy of the executed guaranteed energy savings contract;
 - (b) the energy consumption costs before the date of execution of the guaranteed energy savings contract; and
 - (c) the documentation using industry standards for:
 - i. stipulated savings
 - ii. related capital expenditures; and
- (2) annually report to the department of commerce, in accordance with procedures established by the department of commerce, the savings resulting in the previous year from the guaranteed energy savings contract or utility energy efficiency program.

IC 36-1-12.5-11

Sec. 11. (a) A guaranteed energy savings contract that includes stipulated savings must specify the methodology used to calculate the savings using industry engineering standards.

(b) Stipulated savings may be used for energy conservation measures including the following:

- (1) Heating.
- (2) Air conditioning.
- (3) Ventilating.
- (4) Lighting.
- (5) Roofing.
- (6) Windows.
- (7) Water conservation.
- (8) Fuel and power improvement.
- (9) Any work that is causally connected to the energy conservation measures listed in subdivisions (1) through (8).

(c) The guaranteed energy savings contract shall:

- (1) describe stipulated savings for:
 - (a) energy conservation measures; and
 - (b) work causally connected to the energy conservation measures; and
- (2) document assumptions by industry engineering standards.

IC 36-1-12.5-12

Sec. 12. (a) An improvement that is not causally connected to an energy conservation measure may be included in a guaranteed energy savings contract if:

(1) the total value of the improvement does not exceed fifteen percent (15%) of the total value of the guaranteed energy savings contract; and

(2) either:

(a) the improvement is necessary to conform to a law, a rule, or an ordinance; or

(b) an analysis within the guaranteed energy savings contract demonstrates that:

i. there is an economic advantage to the political subdivision in implementing an improvement as part of the guaranteed energy savings contract; and

ii. the savings justification for the improvement is documented by industry engineering standards.

(b) The information required under subsection (a) must be reported to the department of commerce.

APPENDIX 2

Guaranteed Energy Savings Contract Resources

A Detailed Guide to Energy Performance Contracting in New York Public Schools. New York State Energy Office, Division of Conservation, 2 Rockefeller Plaza, Albany, NY 12223, 1990.

Energy Services Coalition (ESC), 1526 Chandler Street, Madison, WI 53711.
www.escperform.org

National Association of Energy Service Companies (NAESCO), 1615 M Street, NW., Suite 800, Washington, DC 20036. www.naesco.org

Performance Contracting for Energy and Environmental Systems. Hansen, S.J., The Fairmont Press, Inc. 1992.

Model Request for Proposals for an Energy Services Performance Contract, Public Technology, Inc., Washington, DC: 1996. www.pti.nw.dc.us. To order, call 800-PTI-8976 or email pubs@pti.org.

Qualifications-Based Selection Indiana Coalition, c/o Consulting Engineers of Indiana, Inc., 47 S. Pennsylvania, Suite 303, Indianapolis, IN 46204. (317) 637-3316

Rebuild America's Financing Energy Efficiency in Buildings, United States Department of Energy, Office of Energy Efficiency and Renewable Energy, 1000 Independence Avenue, S.W., Washington, DC 20585-0121: 1998.
<http://www.rebuild.org/attachments/guidebooks/financinghandbook.pdf>

APPENDIX 3

Sample Public Notice

Indiana Code 36-1-12.5 can be found in Appendix 1 of this document. *Please refer to sections 5(b) and (c) for specific requirements regarding public notice.*

NOTICE OF REQUEST FOR

[QUALIFICATIONS OR PROPOSALS]

The [*school, library or unit of local government*] is inviting qualified providers to [*submit qualifications for the purpose of proposing energy conservation measures for the following facility(ies)*] (if a request for qualifications)] or, [*propose energy conservation measures for the following facility(ies)*] (if a request for proposals)]

Building Name

Square Footage Annual Energy Cost

The purpose of this project is to reduce facility energy use and costs and energy-associated operating costs. The project will be carried out through a guaranteed energy savings contract or a utility energy savings contract or a utility energy efficiency program pursuant to IC 36-1-12.5.

Responses to this Notice will be received by [*school, library or unit of local government*], at [*building and address*], until [*date and time*]. All responses to this notice received by the deadline will be publicly opened and read aloud immediately following the deadline. Facsimile proposals will not be accepted and [*school, library or local government*] reserves the right to accept or reject any responses, or all responses, or to waive any informalities or errors for a period of 30 days.

Please contact [*name, address, phone*] for more information or to receive the [RFQ or RFP] which includes a brief description of the facility(ies), the services requested, and the project schedule. One copy of the [RFQ or RFP] will be provided to each qualified provider or public utility interested in responding.

APPENDIX 4

Sample Request For Qualifications

This sample Request for Qualifications is intended to serve as a model only. It is included to help schools, libraries and units of local government create a document designed to achieve their objectives, given their unique circumstances and specific legal requirements.

REQUEST FOR QUALIFICATIONS
FOR A
GUARANTEED ENERGY SAVINGS CONTRACT

I. PROJECT INTENT

The [*school, library or unit of local government*] (hereinafter referred to as *solicitor*) is seeking specific qualifications from energy services providers interested in proposing energy conservation measures for the building(s) listed in Attachment A. These measures will be implemented through a guaranteed energy savings contract or utility energy efficiency program pursuant to IC 36-1-12.5.

The [solicitor] is interested in contracting for services that will reduce its energy consumption costs and associated operating costs through energy conservation measures. These services may include but are not limited to:

- A comprehensive energy audit;
- The design, acquisition, installation, and modification of existing and new heating, ventilation and air conditioning equipment, lighting systems, building envelope, domestic hot water systems, and other energy using systems or devices;
- The training of facility staff with respect to any special energy saving, and routine, maintenance and operating procedures for all new and existing equipment; and
- The financing of the energy conservation measures.

Responders to this RFQ must be experienced in the design, implementation, and installation of energy conservation measures and responsive to the project terms and conditions specified in Attachment D. Responders must also either (a) be willing and able to submit a performance bond to ensure the faithful performance of their obligations over the term of the guaranteed energy savings contract or (b) be a public utility as defined in IC 8-1-8.7-2.

The savings from the implemented measures must cover the measures' cost in 10 years or less and must be guaranteed by the energy service provider. At a minimum, the projected annual savings and savings guarantee should be structured to completely offset the annual financing costs associated with the project.

II. RFQ PROCEDURES

A. Four-Stage Process

1.) Submission of Written Qualifications. Companies who wish to be qualified by [solicitor] must submit an original and [x] copies of the completed Attachment E and responses to Attachment F, and [x] copies of a sample technical audit and a sample contract (including savings guarantee) by [date and time] to [name and address]. Both the audit and the contract should be mailed under separate cover. Please label all submissions as follows:

Re: Responses to RFQ – Guaranteed Energy Savings Project

FROM: (Firm Name) _____

(Address) _____

(City) _____ (State) _____ (Zip) _____

(Phone) _____

(Contact Person/Title) _____

All submissions become the property of [solicitor] and will not be returned to the provider. [Solicitor] reserves the right to reject any or all submissions and to waive informalities and minor irregularities in submissions received and accept any submissions if deemed in the best interest of [solicitor] to do so. All costs associated with submission preparation will be borne by the submitting company.

2.) Selection of Short List Candidates [Solicitor], through its designated representatives, will review and evaluate the written responses to the Request for Qualifications (RFQ) in accordance with the evaluation criteria identified in Attachment C. [Solicitor] will select no more than three qualified providers to proceed to the competitive oral interview stage of the procurement process. The three highest-ranked firms will be notified to schedule their appearance at the competitive oral interview, which will be the final step of the selection process.

3.) Oral Interview Each of the qualified firms will participate in a detailed oral interview to more fully discuss how their approach to this project satisfies the evaluation criteria set forth in Attachment C. Each oral interview will be tape recorded, and it will be the sole responsibility of the project team to make the final selection of a project contractor based upon the evaluation of written responses to the RFQ, professional references, and oral responses received during the interview process. A more complete description of the interview format and logistical arrangements will be mailed to the finalists.

- 4.) Development of Contract Based on the written qualifications, review of references, and oral responses received, [solicitor] will select the best qualified firm to conduct this project. [Solicitor] intends to negotiate a final contract. If an acceptable contract cannot be reached within 90 days from the date of provider selection, negotiations with the second-ranked provider may be initiated.

NOTE: [Solicitor] recognizes that detailed estimates of the project's financial benefits are dependent upon the measures finally included in the contract. It would, therefore, be premature to place a major emphasis on projected financial benefits prior to the completion of a detailed engineering study and negotiation of the project structure. However, respondents are encouraged to carefully review the evaluation criteria in Attachment C under Financial Approach and to respond as fully as possible.

B. Questions

Questions regarding this RFQ should be directed to [contact person] at [address and phone number]. Clarifying communication by [solicitor] personnel will be provided; however, this will not relieve providers of the responsibility of meeting the requirements set forth in this RFQ. Provider questions received in writing 10 days prior to the submission deadline and [solicitor]'s response may be shared with all providers who have received an RFQ, if [solicitor] feels this would be helpful.

C. Site Visits

[Solicitor] will arrange walk-through inspection tours of its buildings upon request, prior to the submission of qualifications. Site representatives will be available to answer questions about the operation of the buildings. All providers are encouraged to carefully evaluate the building profile data contained in Attachment A and to visit the facility(ies) in order to enhance their understanding of existing building conditions and retrofit opportunities. To make arrangements to tour the building(s), please contact:

Name: _____ Phone: (____) _____

D. Attachments

The following items are attached for use in the preparation of a response to this RFQ:

- Attachment A: Facility Profile(s)
- Attachment B: Schedule for Contractor Selection
- Attachment C: Evaluation Criteria
- Attachment D: Project Terms and Conditions

Attachment E: Provider Profile Form
Attachment F: Provider Qualification and Approach to Project
Attachment G: Fee Scenario

ATTACHMENT A

Instructions for Preparation of the Facility Profile for the Request for Qualifications

[Attachment A is to be completed by the school, library, or local government. This Attachment lists information on the organization's facilities that will be helpful to energy service providers responding to the Request for Qualifications. The energy service providers will need this information in order to evaluate the opportunity for a successful guaranteed energy savings contract. The format outlined on the following pages provides for most of the needed information. However, as each provider may approach the project differently, be prepared for requests for additional data. If possible, provide information on each building to be included in the project. In projects where the number of buildings is large or where several buildings are essentially identical, note this and include only that information which provides a representative picture of the facilities.]

SECTION I: GENERAL FACILITY DATA

Use additional pages as required

1. Name of Building
2. Address of Building
3. Primary Use
4. Building Operator
5. Building Engineer
6. Building Manager
7. Year Constructed
8. Briefly describe any major changes to building operation or structure during the last four years that significantly affected annual building energy use. What was done? What were the effects on energy use?

9. Describe any major changes planned to occur during the next five years that could significantly affect annual energy use. What changes? Anticipated effects?

SECTION II: OPERATING DATA

1. Describe the typical hours of operation for the facility. Include the general summer and winter temperature setpoints for the facility, and if night setback is done, what the target temperature is.
2. Describe the manufacturer(s), age, type and condition of the HVAC control system(s) used in the buildings(s).
3. If an operating energy management system controls the building, list the manufacturer, year installed, and operating conditions.

SECTION III: PHYSICAL DATA

1. Give the total square footage of conditioned space. If the total areas that are heated and cooled differ in size, please describe their respective sizes.
2. Briefly describe the predominant wall and roof construction. Also describe the type and condition of existing windows.

SECTION IV: ENERGY CONSUMPTION DATA

1. Use the attached Building Energy Consumption and Cost form to summarize energy consumption and costs over the last year.
2. Attach two sample utility bills (summer and winter) for each fuel type used.
3. Attach copies of utility rate schedules that apply to the building, if available.
4. If contract gas is purchased, provide a monthly price history, if available, for the cost of gas.

SECTION V: ENERGY SYSTEMS DATA

Provide as much of the following information as is available.

Appendix 4, Attachment A

1. Briefly describe the major type(s) of HVAC systems(s) serving the building (i.e. terminal reheat, multizone, variable air volume, etc.). Indicate the main fuels used to operate the heating and cooling systems.
2. Estimate the percentage of total area lit by fluorescent ballasts and bulbs, and incandescent bulbs. Estimate the approximate annual hours of operation for each type of lighting. If there is a significant amount of high intensity discharge lighting, describe it in similar terms.
3. Briefly describe any laundry or food facility.
4. Describe the domestic water heating, distribution and control system(s).
5. Describe any other energy consuming equipment or facilities that contribute significantly to the annual energy consumption (e.g. swimming pool, etc.)

SECTION VI: IMPROVEMENTS OPPORTUNITIES

1. Briefly describe any serious equipment, operating, or comfort problems in the building(s). Identify any major mechanical, control or electrical systems scheduled for replacement during the next five years.
2. Briefly list any major energy conservation options identified by a previous analysis of the building.
3. Describe any building improvements to be investigated during this project.

SECTION VII: ADDITIONAL SITE DATA PROVIDED UPON REQUEST (IF AVAILABLE)

1. A more detailed schedule of major mechanical equipment including: age, manufacturer, size, capacity, hours of operation, and areas served.
2. Copies of any previous technical analysis or recommendations of energy conservation options in the building.
3. Detailed documentation related to the energy management system.

BUILDING ENERGY CONSUMPTION AND COST

Building Name: _____

Building Sq/Ft. _____

	ELECTRIC				NON-ELECTRIC			
		Demand		Total Cost	Fuel Type: Natural Gas		Fuel Type _____	
Month & Year of Billing	Consumption (Kwh)	Units (KW)	Charge (\$)	(incl. Demand) (\$)	Therms	(\$)	(Units)	(\$)
Totals								
Btu and Unit Cost by Fuel Type	_____ Btu (kWh/3,413)	\$ _____ (Demand Charge per KW)		\$ _____ (Total Electric Cost/Total Consum.)	_____ Btu (Total Therms/100,000)	\$ _____ (Total Natural Gas Charge/ Total Therms)	_____ Btu (Unit/conversion factor)	\$ _____ (Total Charge/ Total Unit)

Total Energy Use (MMBtu/Yr.) _____ Energy Use Index (Btu/Sqft/Yr) _____

Total Energy Cost (\$/Yr.) _____ Energy Cost Index (Cost-Sqft/Yr.) _____

1 MMBtu - 1,000,000 (1X10) BTU

ENERGY CONVERSION FACTORS

Energy Type	Conversion Units		
Electricity:	1 kWh	=	3,413 Btu (site)
Natural Gas:	1 Therm	=	100,000 Btu
#2 Fuel oil: (distilled)	1 gallon	=	138,690 Btu
#4,5,6 Fuel oil: (residual)	1 gallon	=	149,690 Btu
Butane/Propane:	1 gallon	=	95,475 Btu
Coal:	1 short ton	=	24,500,000 Btu

Purchased Services

Steam: 1,390 Btu/lb

Hot Water: 1,000,000 Btu/MMBtu

Chilled Water: 12,000 Btu/ton-hr

Other Useful Conversion Factors

1 Horsepower = 0.746 kW (@ 100% efficiency*)

1 Horsepower = 2,545 Btu/hr (@ 100% efficiency*)

1 Boiler horsepower = 33,475 Btu/hr

1 Mbtu = 1,000 Btu (1 X 10³)

1 MMBtu = 1,000,000 Btu (1 X 10⁶)

* For actual energy use, motor efficiency must be included.

ATTACHMENT B

Schedule for Contractor Selection

<u>Activity</u>	<u>Date</u>
Issue RFQ	Week 1
Site Visit (to be arranged)	Weeks 1-6
Qualifications Due	Week 7
Written Qualifications Reviewed And Evaluated (provider list shortened)	Weeks 7-13
Provider Recommended	Week 20
Approval of Selected Provider	Week 21
Technical Audit, Project Analysis, Contract Negotiations	Weeks 21-34
Contract Presented and Signed	Week 35

ATTACHMENT C

Evaluation Criteria

Attachment C includes two items for a political subdivision's use in preparing a Request for Qualifications:

- 1) Suggested criteria for use in the evaluation of responses to the RFQ, and
- 2) Sample format and topics for the oral interview.

The criteria listed below will be used in the evaluation of the following: written submissions of provider qualifications, interviews with previous provider clients, and the responses of providers during final selection interviews, as appropriate. These items are not ranked in order of importance and the establishment, application, and interpretation of the criteria shall be solely within the discretion of the [solicitor].

1. Project Management _____%
 - a. Clear assignment of responsibility for various project tasks to specific individuals. (All individuals with major responsibility for the project's technical design, management, and negotiation should be present at the oral interview.)
 - b. Ability to manage construction, repairs, regular service, and emergencies effectively.
 - c. Comprehensiveness of management, maintenance, and monitoring services provided by the contractor and the specific benefits to [solicitor] of such services.
 - d. Ability to complete all phases of the project on schedule.
 - e. Responsiveness to the specific goals identified in the RFQ and technical appendices.
 - f. Quality of communication skills of the provider's representatives at the oral interview.
 - g. Ability and willingness to coordinate project construction with local utilities, subcontractors, equipment suppliers and facility personnel.
 - h. Quality of provisions for training facility staff.

2. Technical Approach _____%

- a. Understanding of the existing building conditions, systems, operations, and schedules.
- b. Qualifications of the technical design professionals.
- c. The number of past retrofit projects that include similar technical measures proposed for inclusion in this project and completed by the person(s) responsible for project technical design.
- d. Quality of a sample technical analysis for a similar type of facility completed by the person(s) responsible for project technical design.
- e. Reliability of equipment performance of provider's past retrofit projects.
- f. Documented savings of previous projects managed by the provider.
- g. Comprehensiveness of the technical approach to the project based on improvements likely to be included and the conceptual design creativity demonstrated during the oral interview.
- h. Typical baseline energy use and operating cost calculation methodology.
- i. Approach to adapting control strategies, equipment, and maintenance practices in response to changes in utility rates, technology, and building conditions, in order to enhance project performance.

3. Final Approach _____%

- a. Financial soundness and stability of the provider.
- b. Demonstrated ability to provide or arrange project financing.
- c. Sample financing arrangement proposed for this project.
- d. Quality and clarity of the financial savings calculation methodology.
- e. Completeness of most recent annual financial report.
- f. Clarity of sample project invoice.
- g. Terms of the guarantee of the projects' financial performance.
- h. Demonstrated ability to meet savings guarantees on prior projects.

4. Legal Approach _____%

- a. Quality of sample legal agreement.
- b. Contractual provisions to accommodate changes in building energy use (i.e. occupancy, schedule, etc).
- c. Flexibility of legal agreement to accommodate needs of [solicitor].
- d. The quality of provisions for early termination of the contract at the initiative of either party.
- e. Ability and desire to comply with all requirements in IC 36-1-12.5.

Oral Interview Format and Topics

- I. Introductions
- II. Provider Presentation (1/2 hour)
 - A. Qualifications.
 - B. Approach to the proposed project (design, construction, financing, training, operation and maintenance services, performance monitoring, and performance enhancement).
 - C. Responsibilities of provider personnel involved.

- III. General Questions (1 hour)

[This segment should be used to ask questions about the provider's general record and competency in areas such as the following.]

- A. Accuracy of predicted performance on past projects.
 - B. Ability to complete construction on schedule.
 - C. Methodology used to calculate project savings, measure performance, and assign dollar values to savings over the term of the contract.
 - D. Method of project invoicing.
 - E. Proposed arrangements for equipment service and maintenance.
 - F. Terms of the savings guarantee.
 - G. Preferred approach to project financing.
 - H. Key provisions and flexibility of the legal agreement submitted.

- IV. Site Specific Questions (1 Hour)

[This segment should be used to ask questions about the provider's technical approach to improving energy efficiency and reducing energy costs at the facility(ies) mentioned in the RFQ. The provider should be asked to respond to specific questions that include, but are not limited to, the following topics.]

- A. Energy conservation measures likely to be included in a contract, measures that merit more study, and measures previously proposed that seem likely to be rejected.
 - B. Site specific operational and maintenance changes proposed.
 - C. Estimated range of energy and demand savings available and the basis for those estimates.
 - D. Estimated range of gross annual utility cost savings available and the basis for those estimates.
 - E. Specific methods of equipment and performance monitoring.

ATTACHMENT D

Project Terms and Conditions

[This section describes the minimum conditions that the school, library or local government will accept from the selected provider. Part 1 defines the Technical Requirements to be included in the final contract, while Part 2 defines the Key Contractual Provisions.]

PART 1 – TECHNICAL REQUIREMENTS

1. Technical Energy Analysis: The provider's proposed contract terms must include the performance and presentation of the results of a detailed technical energy audit of a quality acceptable to [solicitor]. This audit must include estimates of all costs attributable to the work stipulated in the agreement, including the costs of design, engineering, installation, maintenance, repairs, or debt service and the amounts by which energy consumption or operating costs will be reduced. The audit must also contain a listing of contractors and subcontractors to be used by the provider with respect to the recommended energy conservation measures.

If [solicitor] decides to enter into a contract with the selected provider after the audit has been accepted, [solicitor] agrees to pay the fee indicated in Attachment F item 1-3, provided the proposed contract terms offered by the provider meet all the conditions set forth in this RFQ.
2. All measures installed must be approved by the State Department of Health, Office of the State Fire Marshal, Office of the State Building Commissioner, and any other state agency designated by statute.
3. An architect or engineer licensed under IC 25-4 or IC 25-31 must approve the installation of energy conservation measures if they have a cost of more than fifty thousand dollars (\$50,000).
4. The provider must ensure that all energy conservation measures conducted under this project will be integrated with existing building systems to the satisfaction of [solicitor].
5. Specific standards of comfort will be defined and must be maintained throughout the term of the contract.

6. [Solicitor] requires that the project's estimated savings in energy consumption costs and operating costs be guaranteed.
7. The provider will be required to work with current building management and maintenance personnel to coordinate construction and to provide appropriate training in operation of retrofits. No equipment shall be installed that will require the hiring of additional personnel by (solicitor) unless contract negotiations produce an explicit exemption from this rule for a specific installation.
8. Provider must deliver "as built" and record drawings of all existing and modified conditions associated with the project within 30 days of the completed installation. These should include architectural, mechanical, electrical, structural, and control drawings, all of which conform to typical engineering standards, as well as operating manuals. All drawings are to be printed on mylar and must be reproducible.

PART 2 – CONTRACTUAL PROVISIONS

1. The project will be conducted in compliance with IC 36-1-12.5 and be subject to IC 5-16-7 and all other applicable laws.
2. The contents of the RFQ submission will become part of the final contract.
3. [Solicitor] retains final approval over the scope of work and end-use conditions.
4. The provider must provide a final schedule of project milestones including equipment servicing provisions, which will become part of the final contract. In the event any milestone or equipment servicing provision is not met as scheduled without prior approval, [solicitor] reserves the right to consider it as a default and withdraw from all contractual obligations without penalty.
5. The contract must contain a mutually agreeable clause whereby unanticipated changes in occupancy or use can be accommodated in a fair manner for both parties.
6. [Solicitor] must have access to inspect, test and approve both the work conducted in the facility during construction and operations and to the books, records, and other compilations of data that pertain to the performance of the provisions and requirements of this agreement. Records shall be kept using

Appendix 4, Attachment D

generally accepted accounting principles, and calculations shall be kept on file in legible form.

7. The provider will be responsible for maintaining the levels of comfort for each building as specified. Persistent failure to maintain the defined climate and lighting conditions will constitute a default.
8. The provider and all subcontractors must retain labor records as specified by IC 36-1-12.5, section 9.
9. All drawings, reports and materials prepared by the provider specifically in performance of the contract shall become the property of [solicitor] and shall be delivered to them as needed or upon completion of construction.
10. All information needed to meet the savings report procedures specified by the Indiana Department of Commerce, Energy Policy Division will be provided to [solicitor] by the project contractor.
11. The savings in energy and operating costs due to the energy conservation measures must be guaranteed to cover the costs of the payments for the measures and the provider must agree to reimburse [solicitor] for any shortfall if the actual savings fall below the guaranteed savings.
12. If the project will be financed on an installment basis, the balance of the payments must be remitted within a period not to exceed the lesser of ten (10) years or the average life of the energy conservation measures installed, beginning with the date of final installation.
13. If the provider is not a public utility established under IC 8-1-8.7-2, the provider must submit to the [solicitor] a performance bond to ensure the provider's faithful performance of its obligations over the term of the contract.

ATTACHMENT E

Guaranteed Energy Savings Contract
Provider Profile Form

All questions must be addressed by the provider in order for this qualification form to be properly completed. Failure of the contractor to answer any question, or comply with any directive contained in this form, may be used as grounds to find them ineligible. If a question or directive does not pertain to your organization in any way, please indicate that fact with the symbol N/A. For additional space attach 8 1/2" x 11" sheets and indicate reference number (i.e., 12a, 12b, etc.) to correspond with each question.

Contact Information

1a. Firm Name

Business Address

City _____ State _____ Zip Code _____
County _____

1b. Names and titles of two contact people.

Phone () _____

Phone () _____

1c. Submitted by:

_____ Parent Company

_____ Division

_____ Subsidiary

_____ Branch Office

2. Date prepared _____

3. Type of Firm

_____ Corporation

_____ Partnership

_____ Sole Ownership

_____ Joint Venture

4. Federal Employer Identification Number _____ -

5. Year firm was established _____

6. Name and address of parent company, if applicable:

7. Former firm name(s) if applicable:

8. Five-year summary of contract values for energy related services (insert year and index number).

19__ 19__ 19__ 19__ 19__					Index Range of Contract Values:	
Index	_____	_____	_____	_____	1.	Less than \$100,000
					2.	\$100,000 - \$250,000
					3.	\$250,000 - \$500,000
					4.	\$500,000 – 1Million
					5.	\$1 Million – 2 Million
					6.	\$2 Million – 5 Million
					7.	\$5 Million – 10 Million
					8.	\$10 Million or Greater

9. Corporate Background/Historical Data

- 9a. How many years has your firm been in business under its present business name?
_____ years?
- 9b. Indicate all other names by which your organization has been known and the length of time known by each name.
- 9c. _____
How many years has your firm been involved in the energy-related business?
_____ years
- 9d. Please identify all states in which your firm is legally qualified to do business.

10. Personnel Information

- 10a. Please attach the resumes of the principal individuals who will be directly responsible for this project. Please indicate the specific qualifications of each individual and the role they will play for the duration of the contract. Clearly identify who will have the primary responsibility for the technical analysis and design of the project.
- 10b. Please give the number of years of design and construction experience for each of the above individuals and describe all supervisory responsibilities. Please provide a list of all projects each individual has been associated with during the last 5 years including type of project and dollar size.
- 10c. Please identify your firm's legal counsel for this project. Give the name and address of the primary individual responsible for contract negotiation.

11. Financial References

- 11a. Please attach your firm's most recent annual report.
- 11b. Please attach the most recent year-end financial statements, including balance sheet and income statement, dated within twelve months of filing this provider profile form.
- 11c. Please provide the name, address, and telephone number of the firm(s) that prepared the financial statements referred to above.

12. Project History

On separate sheets of 8 ½ x 11 paper please briefly describe 10 energy performance contracts or related projects that your firm has managed. These references should include buildings similar to the building(s) described in attachment A of this RFQ. Please put an asterisk by those project references involving similar buildings. Please provide the following information for each project:

- Project title
- Building(s) owner
- Location
- Project dollar amount (installed project costs)
- Source of funds
- Type of contract (i.e., guaranteed savings, lease purchase, etc.)
- Designer and name(s) of primary technical design personnel
- Start and end dates
- Projected Annual Energy Savings (Therms, KWH, KW, Gallons)
- Achieved Annual Energy Savings (Therms, KWH, KW, Gallons)
- Projected Annual Operating Cost Savings
- Achieved Annual Operating Cost Savings
- Any special notes or comments
- Names and telephone numbers of the facility representatives with whom you have worked

13. Authorization

Dated at _____ this _____ day of _____
20 ____.

Name of organization:

By: _____

Title: _____

14. Notary Statement

Mr./Ms. _____ being duly sworn deposes and says that he/she is the [title] of
[firm's name] and that answers to the foregoing questions and all statements therein contained are
true and correct.

Subscribed and sworn before me this _____ day of _____ 20____.

Notary Public _____

My commission expires 20_____.

ATTACHMENT F

Provider Qualifications and Approach to Project

Please provide responses to each item below. Provide your responses on 8-1/2" x 11" sheets of paper, and number and title each response. All pages in your response to this attachment should be numbered sequentially.

1. General Approach

1.0 Project Summary (not to exceed 5 pages)

Please summarize the scope of services (design, financial, operations, maintenance, training, etc.) that would be offered by your firm for this project. Please include a brief description of your firm's approach to project management and the specific benefits to [solicitor].

1.1 Training Provisions

Please describe your firm's capabilities and experience in providing technical training for facility personnel on past projects.

1.2 Design and Monitoring

Please describe your firm's approach to the technical design of this project and your provisions for ongoing monitoring of this project's performance.

1.3 Cost of Audit

Please estimate the total cost of the audit to the [solicitor], if, as noted in Attachment D (Project Terms and Conditions), Part 1, item 1, the audit is completed and accepted but the [solicitor] chooses not to enter into a contract.

1.4 Calculation Methodology

Please describe in detail the methodology you normally use to compute baseline energy use and baseline operating costs.

1.5 Procedure for Calculating Energy and Operating Cost Savings

Please list all procedures, formulas, and methodologies (including any special metering or equipment) your firm will use to calculate energy and operating cost savings.

1.6 Methodology to Assign Dollar Value to Savings

Please describe the procedure to assign dollar values to the savings calculated in “Procedure for Calculating Energy and Operating Cost Savings”

1.7 Vendor Fee Calculation

Please describe the method(s) used to calculate your firm’s fees.
(See Attachment G, Fee Scenario)

1.8 Savings Guarantee Calculations

Please describe your procedures and schedule for measuring the project’s financial performance, and how the guarantee provisions work in the event that project results vary from the projections.

1.9 Project Billing and Invoice

Please describe your firm’s standard billing procedures and attach a sample project invoice.

1.10 Provision of Financing

Please briefly describe the types of “innovative” financing arrangements provided by your firm for past retrofit projects.

1.11 Equipment Ownership and Service Responsibility

Please describe the status of equipment ownership and service responsibility at contract expiration.

1.12 Sample Contract

Please include, under separate cover, [x] copies of a sample contract, including the savings guarantee, offered by your firm.

2. Site Specific Approach

2.0 Technical Site Analysis

Based on your preliminary assessment of the information provided, please describe any equipment modifications, installations or replacements at the facility that your company would consider installing as a part of this project.

2.1 Operation and Maintenance

Please describe any major changes in operation or maintenance for the facility that your company foresees based on the information provided.

2.2 Project Financing

Please describe your firm's preferred approach to providing or arranging financing for this project and any special conditions associated with this method.

2.3 Sample Audit

Please include, under separate cover [x] copies of a sample audit conducted by your firm for a similar project. Clearly mark "RFQ Audit" on the outside of the envelope. This audit must include detailed energy and economic calculations.

ATTACHMENT G

Fee Scenario

The following is a simplified scenario designed to help the evaluation team determine fees and project costs that might be charged by each of the providers that were short-listed.

A large residential multifamily building of 100 apartments uses \$250,000 in utilities annually - \$100,000 for natural gas, \$100,000 for electricity and \$50,000 for water and sewer. An audit has been performed and the recommended measures are replacing the boiler, installing low-flow appliances and aerators, and re-lamping with more efficient lighting. The projected annual savings generated are 20% - \$20,000 from the natural gas usage, \$20,000 from the electricity and \$10,000 from the water and sewer usage. Total construction costs for installing the measures equal \$300,000. The audit cost is \$12,000. There are no outside sources of funding to help write down the project costs – all of the costs must be covered by the savings.

Please provide the following information:

- 1.) An itemized estimate of the total costs for this project. Include non-construction costs such as fees for project management, engineering, monitoring, education of the 300 residents, training of the one maintenance worker and any other contractors you would normally include, service contracts, etc. If you are unable to assign an exact number, provide a range of fees you've charged in past contracts for facilities with similar retrofits, energy use and savings projections, and a rationale for how the fee would be determined in the actual project.
- 2.) An estimate of how these fees might change if the facility were a commercial building with 30 employees working 8:00 a.m. to 6:00 p.m., instead of residential.
- 3.) With a 6% interest rate, how long would the term of the contract have to be in order for the **guaranteed** portion of savings to pay for the debt service needed to finance the total project costs in question number 1?
- 4.) How much of the \$50,000 annual savings would your company guarantee?
- 5.) If you have a shared savings provision, or fees based on savings, please answer the following: If the project actually produced \$60,000 in savings annually (exceeded projected annual savings by \$10,000), what amount would be subject to the shared savings/savings-based fees?
- 6.) If you have a shared savings provision, or fees based on savings, please list your normal percentage split. Estimate the dollar amount of your fees/share of savings in the example in question 5. If this is subject to negotiation, list a range of what has been done in your past contracts and provide estimates of your fees/share using the top and bottom of the range.

APPENDIX 5

Sample GESC Projects

Included in this appendix are samples of GESC projects, showing methods used for calculating energy, energy cost and operational cost savings, among other components of such projects.

The sample GESCs are intended to give governing bodies and other interested parties some guidance on how energy service providers may calculate savings and costs related to the GESC project. While based on real projects, they are not meant to be comprehensive or to include all situations that may arise. Owing to the nature of GESCs and the differences inherent in various energy service providers, projects similar to those listed below may generate different savings and/or costs.

GESC SAMPLE #1

Schedule Of Savings

1. Schedule of Savings

The total energy and operational cost avoidance over the Term of the contract is equal to or greater than **\$1,877,800** as defined in the table below:

YEAR	ENERGY	OPERATIONAL	TOTAL
1	\$14,117	\$173,663	\$ 187, 780
2	\$14,117	\$173,663	\$ 187, 780
3	\$14,117	\$173,663	\$ 187, 780
4	\$14,117	\$173,663	\$ 187, 780
5	\$14,117	\$173,663	\$ 187, 780
6	\$14,117	\$173,663	\$ 187, 780
7	\$14,117	\$173,663	\$ 187, 780
8	\$14,117	\$173,663	\$ 187, 780
9	\$14,117	\$173,663	\$ 187, 780
10	\$14,117	\$173,663	\$ 187, 780
TOTALS	\$141,170	\$1,736,630	\$ 1,877,800

or the sum of the Retrofit and Support Costs for such Guarantee Year, whichever is less. Provided further, in no event shall the savings guarantee provided herein exceed the total installation, maintenance, and financing costs for the Work under this Agreement.

The Term of this contract is for **10** years.

The Baseline Period is defined as **7/1/99 to 6/30/01 as represented in the building energy use simulation Case #2.**

1.1 Energy Savings. The annual amount of energy savings is the sum of the below listed ECMs. The Savings are based on the listed Energy and Operational Cost Avoidance Guarantee Practices contained in Section 1.3 herein.

#	ECM Description
1	Lighting
2	Fully integrated HVAC system including efficient new hot water boilers to eliminate use of the inefficient steam boiler in the Annex, a used air cooled chiller replacing the window units, all new four pipe unit ventilators with economizer and reheat capabilities, VAV units in rooms adjacent to new addition, and DDC temperature control system providing night setback and other functions.

1.2 Operational Cost Savings. The annual guarantee of operational cost avoidance strategies is listed below. The Savings are based on the listed Energy and Operational Cost Avoidance Guarantee Practices contained in Section 1.3 herein.

The operational cost savings described below and identified in Section 1 are deemed satisfied upon contract execution.

#	Operational Savings Description
1	Providing a central heating and cooling system vs. providing a stand alone window AC system using R.S. Means (Square Foot Costs, 21 st Annual Edition) costs. According to the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) HANDBOOK (1999 – <u>Applications</u> , Table 2, page 36.3), the new system has a useful life of 20 years vs. 10 years for the existing window units.

1.3 Energy and Operational Cost Avoidance Guarantee Practices:

1.3.1 Baseline Operating Parameters are the facility(s) and system(s) operations measured and/or observed before commencement of the Work. The data summarized will be used in the calculation of the baseline energy consumption and/or demand and for calculating baseline adjustments for changes in facility operation that occur during the Guarantee Period. Provider and Customer agree that the operating parameters specified in this section are representative of equipment operating characteristics during the Base Year specified in this Agreement.

Baseline represented by data delineated in Case 2 included in Attachment G-CS3 “Calibrated Simulation Inputs: Cases 1 – 4”.

The “adjusted” baseline with night setback (NSB) turned off and the window A/C cooling equipment sized to meet the full cooling requirements is represented by data delineated in Case 5 included in Attachment G-CS4 “Calibrated Simulation Input: Case 5”.

1.3.2 Proposed Operating Parameters of the facility(s) and system(s) after completion of Work. The data summarized will be used in the calculation of the post-retrofit energy consumption and/or demand. PROVIDER and CUSTOMER agree that the proposed operating parameters specified in this section are representative of equipment operating characteristics during the Guarantee Period specified in this Agreement.

The proposed operating parameters include the efficiencies of the proposed equipment and system and assumes the Night Setback will be used on the HVAC system during unoccupied period and includes specific room set points, economizer set points, unoccupied drift points, and details of occupied and unoccupied periods.

The proposed parameters represented by data delineated in Case 3 included in Attachment G-CS3 “Calibrated Simulation Inputs: Cases 1 – 4”.

1.3.3 Operational Cost Avoidance: The following methodologies and/or calculations were used in determining the Operational Costs and/or avoided costs due to the Retrofit and Support Services implementation:

A. Overview

This section is comprised of a cost of operations summary, which shows why Provider will make an impact at the facility long term. In accordance with HB 1158, recently enacted, the following standards and methodology were used in determining the operational capital cost avoidance.

1. Use engineering standards to put together the capital cost avoidance for 10 years: **R.S. Means Square Footage Costs – 21st Annual Edition Replacement Cost of HVAC Systems**, page 189 was used for documenting the stipulated capital cost avoidance. The school agrees that these costs were going to be spent in the next 10 years.
2. Lifecycle Operational Savings presented below are calculated over a 20 year life due to providing a new proposed air conditioning system-type which will last longer than the existing air conditioning system-type according to table 3 of ASHRAE Handbook (IE: Estimates of service lives of various system components).

Current System – Window Air Conditioning System listed with a 10-year life

New System –Air Cooled McQuay Chiller, Trane Unit Ventilator system, 20 years stated life according to ASHRAE.

The school believes the HVAC System will be replaced in the next 10 years and currently does not meet Air Quality Codes or Combustion Air Codes in the boiler room.

3. Calculation Parameters:

Elementary	55,000 Sq. Ft.
Annex Building	40,000 Sq. Ft.
Total Square Footage	95,000 Sq. Ft.

B. Summary of Operational Cost Avoidance

1. Window A/C Units Installation Cost **Over 20 Years**

\$2,520,128	Year 0 – Initial Installation (See 1.3.3 C below)
<u>\$ 799,781</u>	Year 9.9 – Replacement cost (See 1.3.3 D below)
\$3,319,909	Total

Financing \$3,319,909 at 5% interest equals \$431,588 a year for 10 year.

2. Provider Program with longer Life Equipment = **\$ 1,911,100 Total**

Financing \$1,911,100 at 5% interest equals \$ 248,443 a year for 10 years.

3. Final Analysis

Window Units Cost	\$ 431,588 a year for 10 years
<u>Provider Program</u>	<u>\$ 248,443 a year for 10 years</u>
Total Operational savings	\$ 183,145 a year for 10 years going with the Provider Program

C. Initial Installation Cost for WINDOW A/C

<u>School</u>	<u>Item</u>	<u>Square Footage</u>	<u>Area of Building</u>	<u>Cost/Sq. Ft.</u>	<u>Cost</u>
Middle School	Cooling DX Systems	55,000	100%	\$ 7.98	\$ 438,900
	Heating	95,000	100%	\$ 5.82	\$ 553,482
	Asbestos Service & Distribution 2400 amp Service	55,000	100%	\$0.64	\$ 35,200
	Lighting and Power	55,000	100%	\$6.66	\$ 366,300
	Ceiling Finishes	55,000	100%	\$ 3.52	\$ 193,600
	General Conditions (Overhead and Profit) 25%				<u>\$ 396,871</u>
	Total Construction Cost plus Profit				\$1,984,353
7%	Architect Fees			\$ 138,905	
4%	Construction Management Fees			\$ 79,374	
1%	Miscellaneous Expenses (Phone, Trailer, etc.)			\$ 19,843	
5%	Contingency			\$ 99,218	
10%	Soft Cost (Underwriters fee bond council, etc.)			<u>\$ 198,435</u>	
Total Construction Cost (Hard and Soft)				\$2,520,128	

The school believes the HVAC System will be replaced in the next 10 years and currently does not meet Air Quality Codes or Combustion Air Codes in the boiler room.

D. Replacement Cost for WINDOW A/C HVAC System

Due to age or estimates of services lives. Documented in Table 3 of 1999 ASHRAE Handbook.

<u>School</u>	<u>Item</u>	<u>Square Footage</u>	<u>Area of Building</u>	<u>Cost/Sq. Ft.</u>	<u>Cost</u>
Middle School	Cooling DX Systems	55,000	100%	\$ 9.16	\$ 503,800
	Square footage cost increased due to inflation, inflated at less than 2%				
	General Conditions (Overhead and Profit) 25%				<u>\$ 125,950</u>
	Total Construction Cost plus Profit				\$ 629,750

7%	Architect Fees	\$ 44,082
4%	Construction Management Fees	\$ 25,190
1%	Miscellaneous Expenses (Phone, Trailer, etc.)	\$ 6,297
5%	Contingency	\$ 31,487
10%	Soft Cost (Underwriters fee bond council, etc.)	<u>\$ 62,975</u>

Total Construction Cost (Hard and Soft) **\$ 799,781**

1.4 Guarantee Savings Measurement and Verification Plan

1.4.1 Measurement and Verification Methodology(s):

Energy Conservation Measure	<i>Energy Savings Verification Method</i>
Lighting	OPTION A w/ Stipulated ON Hours
Fully integrated HVAC system	OPTION D – Calibrated Building Energy Simulation w/ Stipulated Agreement on Resultant Savings

1.4.2 Energy Cost Avoidance: The following describes the Measurement and Verification procedures, formulas, and stipulated values that may be used in the calculation of the Energy Cost Avoidance.

A. LIGHTING

Existing Wattage: Determined from Actual Measurement of Wattage on Representative Sample of Lighting in each Building. (See Attachment G-L2)

Proposed Wattage: The expected Post-Retrofit Wattage is listed in the Lighting Spreadsheets as Proposed Wattage. Upon completion of the lighting retrofit, actual readings will be taken on a representative sample to verify the wattage reduction.

Energy Savings: The difference between the existing wattage and the proposed wattage times the mutually agreed lighting ON Hours calculated on a room-by-room basis. (See Attachment G-L1)

Economic Value of Energy Savings: Economic value of kWh reduction is calculated at the average Baseline Period cost of \$0.0562 per kWh. (See Attachment C-CS1)

Lighting “ON” Hours:

<u>Hours per Year</u>	<u>Types of Spaces</u>
500	Storage
1620	Classrooms, Kitchen
2080	Library areas, Offices, Cafeteria
4316	Toilets, Main Entry, Lobby, Restrooms, Corridors, Stairwells
8760	Exit Signs

B. FULLY INTEGRATED HEATING, VENTILATING, AIR CONDITIONING (HVAC) SYSTEM

Selection of Option D

This ECM has many interrelated effects, yet it only affects one part of the building. A single source of baseline energy data does not exist since several plants serve the systems affected by this ECM. One of the plants also serves another unaffected building. Therefore Option D – building energy use simulation was selected as the preferred M&V method.

Building Energy Simulation Program

The Trane Trace 600 v18.11 program was selected as the modeling tool.

Normalization to a Common Set of Conditions

The common set of conditions used for the calculation of energy use is the Trane Trace 600 weather tape designated “INDIANP”. Other conditions are as delineated by the input files in Attachments G – CS3 and G – CS4.

Building Energy Simulation Methodology Primer

Today the Building Energy Simulation Computer Program is the most accurate and most reliable method of determining the building energy usage, which will occur, after a specific change to a building has been made. In a Building Energy Simulation Program (commonly referred to as a “simulation”) the user defines to the program the size, shape, location, and building orientation, the construction and internal components of its walls, windows, ceilings, roof, floors, lighting, curtains, etc and how the building is used including what lights are on when, where people are, when and where, what the thermostat settings are during the day, at night, and on the weekends, what energy consuming equipment they have in their offices, classrooms, kitchens, etc., how they use it and so forth. The program also needs to know what the heating, ventilating and air conditioning systems are, what type, which rooms each specific unit serves, what kind of boiler, chiller, furnace, condensing unit, etc., and what is its control strategy.

Armed with this information, the simulation program takes the very basic, but very effective approach of analyzing each room for each hour and then adding things up. When it looks at a given room, it asks – at this hour, what is the temperature outside, where is the sun, is the sky clear or cloudy, inside the room, are the lights on, how many people are inside, how physically active are they, what equipment is operating, what was happening in the room last hour, etc. From this the program calculates how much heating or

cooling the room will need during the hour and how much energy and what type its equipment will use during that hour.

After figuring up each room for that hour, the simulation looks at each piece of heating, ventilating, and air conditioning equipment and determines the exact amount of heating or cooling it needs to do that hour to exactly meet the needs of all the rooms it serves. It takes into account the control strategy, its energy efficiencies at that particular load point to end up determining how much electricity, gas, hot water, chilled water, domestic water or steam it needs that hour to satisfy the spaces it serves. After its done all the heating, ventilating and air conditioning equipment, it then performs the same type of analysis on the central pumps, boilers and chillers. It ultimately reduces everything down to the kW of electricity and therms of gas needed by that building for that hour.

After completing that hour, it moves on to the next, and so on until you have the results for a whole year of operation of that building.

Calibration of Simulation

Calibrating a simulation requires a broad and in-depth knowledge of the inter-relationships within building HVAC systems, knowledge of how the simulation program looks a things and knowledge of how the building systems really operate – which may well be different from the way that people say they operate. Once a simulation has been effectively calibrated, it is a tool, which can accurately predict the effects of virtually any building change, which can be mathematically described.

The Building Energy Simulation for Elementary School was calibrated against the electric and natural gas bills for the past three fiscal years. This provides a continuous time period from July 1998 through June 2001.

Calibration (Baseline) Conditions

Elementary School is heated by two separate boiler plants, which are on two separate meters.

The “Cafeteria Addition” (4,486 square feet) which includes the cafeteria, the art rooms, classrooms #14 and #15, and related areas are heated by a natural gas fired hot water boiler installed with that addition. The gas meter serving this boiler also supplies the domestic hot water heaters for the entire building.

The remainder of the building (39,211 square feet) is heated by the natural gas fired steam boiler located across the street in the Annex. In addition to heating this portion of the Elementary School, this steam boiler also heats the entire Annex (33,658 square feet). Thus 53.81% of the square footage heated by the Annex boiler is in the Elementary School. Both the Annex and the Elementary have the same type of construction, the same types of activities and the same schedules. Thus the usage per square foot will be about the same for both buildings.

Therefore, the natural gas usage was determined to be the sum of 100% of the gas usage of the gas meter at the Elementary school (feeding the hot heating water boiler and the domestic hot water heaters) plus 53.81% of the gas meter for the Annex boiler.

Natural Gas Use – Calibration Analysis

The process of calibrating a Building Energy Simulation provides one with a tool to determine the value of certain unknown factors working out the combination of values for these unknowns that are needed to provide the result show by the energy use history (utility bill history). Two unknowns affecting the

natural gas use are 1) whether Night Setback is being used and 2) the seasonal efficiency of the steam boiler system. While the seasonal efficiencies of hot water heating systems normally stay reasonably constant, the efficiencies of steam systems vary widely due to the effects of steam traps and other system components when not regularly maintained or replaced as needed. After a number of simulation runs, it was determined that the hot water boiler system is operating at a seasonal efficiency of about 78% and the steam system at about 63.6%.

In the two-year calibration period, the Elementary building used an average of 28,426 therms per year. The calibrated simulation projected gas usage is within 0.44% of that figure.

The answer to the question of whether the building has been using Night Setback or not is found in Figure 1, a plot of both actual and simulation projected monthly natural gas usage. Simulation projections are shown for building operation with Night Setback and without (24/7 Operation). Night Setback reduces energy cost by allowing the building to cool down (winter) or heat up (summer) during the period when the building is unoccupied. This cooling down or heating up reduces the energy loss through the walls and roof, thus saving energy. Sometimes, people will shut off the fans in room units, but not the valve on the heating coil (or the heating coil valve doesn't seat tight) and thus will not achieve Night Setback savings even though they think they are doing night setback. From Figure 1, it is evident that the profile of the actual gas usage follows that of the 24/7 Operation, not that of Night Setback. Thus a Night Setback savings opportunity exists in this building. (For detailed information on Figure 1, see Attachments G – CS5 and CS6)

Electrical Energy Use – Calibration Analysis

In calibrating the Building Energy Simulation model against actual electrical usage, it is necessary to recognize that while the building is air conditioned, most of it (the classroom area) is air conditioned with equipment that has the capacity to meet only a portion, not all of air conditioning load. Taking this into account, it is possible to calibrate the building energy simulation to within 1.20% of average actual usage over the past two years. The results are shown in Figure 2 (For detailed information on Figure 2, see Attachments G – CS6)

For details of the resultant Calibrated Energy Simulation, see Attachments G- CS2, CS3, and CS4.

Baseline Adjustment – Improved Cooling Capacity to meet Comfort Requirements

The new air conditioning system will be capable of meeting the entire air conditioning, thus for comparative purposes one needs to determine what how much electricity the existing system would be use if it met the entire air conditioning load. Now that the Building Energy Simulation Model has been calibrated, it can be used to make this determination. The results are shown below:

MONTH	CALIBRATED GAS USE (Therms)	CALIBRATED ELECTRICAL USE (kWh) (with currently limited capacity)	CURRENT SYSTEM ELECTRICAL USAGE (if it met the entire cooling load)
January	6,574	11,662	11,662
February	5,833	10,559	10,559
March	4,067	12,267	12,267
April	701	10,355	10,355

May	52	12,289	15,415
June	52	10,370	24,464
July	47	10,938	28,367
August	54	14,410	26,938
September	47	11,920	14,975
October	1,177	11,326	11,326
November	3,494	11,569	11,569
December	6,454	11,471	11,471
TOTAL	28,552	139,135	189,366

For detailed information on the above results, see Attachments GS–CS2 and CS5

Proposed New HVAC System Modeling Parameters

The proposed new Heating, Ventilating, and Air Conditioning (HVAC) system will be modeled with the following:

1. Use of Night Setback to produce reduced energy consumption during unoccupied hours (typically 75% of the hours in a normal week of school).
2. New efficient gas fired hot water boilers for heating the entire Elementary building. (Providing an 81% seasonal efficiency vs. the present 78% on the hot water and 63.9% on the steam)
3. A central air-cooled chiller to provide air conditioning about 20% more efficiently than the existing window units.

Because the new air conditioning system uses central chilled water instead of individual direct expansion, it increases the range over which outdoor air economizers can be used to reduce compressor operation.

The energy unit savings are determined by the difference between Case 5 and Case 3.

The energy cost savings is calculated by multiplying the monthly energy unit savings by the simple average of the two-year baseline cost data.

The energy use of the existing system (if it met the entire cooling load) vs. that of the proposed system (projected by the Calibrated Building Energy Simulation) is shown below:

	EXISTING (Full AC)			PROPOSED			SAVINGS	
MONTH	Therms	kWh		Therms	kWh		Therms	kWh
January	6,574	11,662		2,602	10,085		3,972	1,577
February	5,833	10,559		2,671	9,148		3,162	1,411
March	4,067	12,267		2,813	10,812		1,254	1,455
April	701	10,355		1,292	9,456		(591)	899
May	52	15,415		79	12,818		(27)	2,597
June	52	24,464		52	11,641		0	12,823
July	47	28,367		47	13,703		0	14,664
August	54	26,938		54	23,708		0	3,230

September	47	14,975		47	13,091		0	1,884
October	1,177	11,326		478	10,159		699	1,167
November	3,494	11,569		1,693	10,008		1,801	1,561
December	6,454	11,471		2,562	9,820		3,892	1,651
TOTAL	28,552	189,366		14,389	144,489		14,163	44,877
				2 Year Ave. Cost			\$0.7742	\$0.0562
				Dollar Savings			\$10,965	\$2,522
				TOTAL HVAC SAVINGS			\$13,487	

1.4.3 Constants: The constants and/or stipulated values used in the following Attachments may be used in the calculations of the energy cost avoidance.

ATTACHMENT G Attachments

Attachment		Description
LIGHTING:		
G – L1		Lighting Energy Savings Calculation SpreadSheet.
G - L2		Pre-Retrofit Readings
CALIBRATED SIMULATION:		
G – CS 1		Base Year Utility Bills
G – CS 2		Summary of Final Calibrated Simulations
G – CS 3		Calibrated Simulation Inputs: Cases 1 – 4
G – CS 4		Calibrated Simulation Inputs: Case 5
G – CS 5		Calibrated Simulation Outputs – Case 1
G – CS 6		Calibrated Simulation Outputs – Case 2
G – CS 7		Calibrated Simulation Outputs – Case 3
G – CS 8		Calibrated Simulation Outputs – Case 4
G – CS 9		Calibrated Simulation Outputs – Case 5

GESC SAMPLE #2

Schedule Of Savings

1. Schedule of Savings

The total energy and operational cost avoidance over the Term of the contract is equal to or greater than \$1,115,358 as defined in the table below:

YEAR	ENERGY	OPERATIONAL	TOTAL
1	\$22,462\$ 0.00	\$89,074	\$111,536
2	\$22,462	\$89,074	\$111,536
3	\$22,462	\$89,074	\$111,536
4	\$22,462	\$89,074	\$111,536
5	\$22,462	\$89,074	\$111,536
6	\$22,462	\$89,074	\$111,536
7	\$22,462	\$89,074	\$111,536
8	\$22,462	\$89,074	\$111,536
9	\$22,462	\$89,074	\$111,536
10	\$22,462	\$89,070	\$111,530
TOTALS	\$202,158.00	\$890,738	\$1,115,358

or the sum of the Retrofit and Support Costs for such Guarantee Year, whichever is less. Provided further, in no event shall the savings guarantee provided herein exceed the total installation, maintenance, and financing costs for the Work under this Agreement.

The Term of this contract is for 10 years.

The Baseline Period is defined as 01/01/00 to 12/31/00.

1.1 Energy Savings. The annual guarantee of energy cost avoidance is the sum of the below listed ECMs. The Savings are based on the listed Energy and Operational Cost Avoidance Guarantee Practices contained in Section 1.3 herein.

#	ECM Description
1	Water conservation for restroom renovation (See Exhibit G-1)
2	Electrical energy savings from lighting retrofit. (See Exhibit G- 2)

1.2 Operational Cost Savings. The annual guarantee of operational cost avoidance strategies are listed below. The Savings are based on the listed Energy and Operational Cost Avoidance Guarantee Practices contained in Section 1.3 herein.

The operational cost savings identified below are deemed satisfied upon contract execution.

#	Operational Savings Description
---	---------------------------------

1	Supply and Man Power Savings for Lighting Retrofit
2	21 st Annual Edition R.S. Means "Square Foot Cost" used to document cost avoidance

1.3 Energy and Operational Cost Avoidance Guarantee Practices:

1.3.1 Baseline Operating Parameters are the facility(s) and system(s) operations measured and/or observed before commencement of the Work. The data summarized will be used in the calculation of the baseline energy consumption and/or demand and for calculating baseline adjustments for changes in facility operation that occur during the Guarantee Period. Provider and Customer agree that the operating parameters specified in this section are representative of equipment operating characteristics during the Base Year specified in this Agreement.

LIGHTING:

Existing Wattage: Determined from Actual Measurement of Wattage on Representative Sample of Lighting in each Building. (See Exhibit G-3)

Proposed Wattage: The expected Post-Retrofit Wattage is listed in the Lighting Spreadsheets as Proposed Wattage. Upon completion of the lighting retrofit, actual readings will be taken on a representative sample to verify the wattage reduction.

Economic Value of Energy Reduction:

East Elem. & Jr. High	Per CINergy Schedule LLF: \$0.0479 per kWh
Central Elementary	Per CINergy Schedule LLF: \$0.0479 per kWh
West Elementary	Per WIN Schedule: \$7.00 per kW and \$0.035321 per kWh
High School	Per WIN Schedule: \$7.00 per kW and \$0.035321 per kWh

Lighting "ON" Hours:

East Elem. & Jr. High, Central Elementary, and West Elementary:

<u>Hours per Year</u>	<u>Types of Spaces</u>
200	Dark rooms
500	Storage
1620	Classrooms, Kitchen
2080	Library areas, Offices, Cafeteria
3550	Shower and Locker Rooms, Gym, Exterior
4316	Toilets, Main Entry, Lobby, Restrooms, Corridors, Stairwells

High School:

<u>Hours per Year</u>	<u>Types of Spaces</u>
500	Storage
1620	Laundry
2080	Athletic Offices
3550	Dressing Rooms, Locker Rooms
4316	Restrooms

WATER:

Savings:

- 3.8 gallons/flush existing converted to 1.8 gallons per flush equals savings of 2.0 gallons per flush
- 2 ½ flushes per person per school day
- 180 school days per year

School Population and Water Cost:

<u>School</u>	<u>Students</u>	<u>Total Pop.</u>	<u>Cost per 1000 Gal</u>
East Elem. & Jr. High	595	685	\$1.02
Central Elementary	324	373	\$7.43
West Elementary	529	608	\$1.96
High School	300	345	\$1.77

1.3.2 Proposed Operating Parameters of the facility(s) and system(s) after completion of Work. The data summarized will be used in the calculation of the post-retrofit energy consumption and/or demand. Provider and Customer agree that the proposed operating parameters specified in this section are representative of equipment operating characteristics during the Guarantee Period specified in this Agreement

The Proposed Operating Parameters are the same as those of the Baseline.

1.3.3 Operational Cost Avoidance: The following methodologies and/or calculations were used in determining the Operational Costs and/or avoided costs due to the Retrofit and Support Services implementation:

Capital Costs

School Corporation

Per the Law Provider used an Industry Engineering Standard, R.S. Means, to document estimated costs.

Means Square Footage Costs – 21st Annual Edition

Replacement Cost for the Plumbing and Restrooms.

High School	182,000 Sq. Ft.
East Elementary & JR High	78,800 Sq. Ft.
Central & West Elementary	136,400 Sq. Ft.
Total Square Footage	397,200 Sq. Ft.

<u>School</u>	<u>Item</u>	<u>Area of Building</u>	<u>Cost/Sq. Ft.</u>	<u>Cost</u>
	Plumbing	100%	\$3.64	\$1,445,808
	General Conditions (Overhead and Profit) 25%			<u>\$ 361,452</u>
	Total Construction Cost plus Profit			\$1,807,260
7%	Architect Fees		\$126,508	

3%	Construction Management Fees	\$ 54,218
1%	Miscellaneous Expenses (Phone, Trailer, etc.)	\$ 18,022
2%	Contingency	\$ 36,145
1%	Soft Cost (Underwriters fee bond council, etc.)	<u>\$ 18,022</u>
Total Construction Cost (Hard and Soft)		\$2,059,977

Although Means Industry Standards dictate that the cost would be \$2,059,977 for plumbing restoration, only a portion of this amount is recognized as operational savings identified in Section 1 and 1.2.

Lighting Savings
20,000 Rated hrs Fluorescent New Fixtures
Versus
750 hr Rated Incandescent Fixtures Lamps

Ballast Savings (Standard Ballast versus Electronic Ballast

2065 Ballast x \$23.00 for a standard non-energy ballast material and labor installation = \$47,495 of cost in 10 years that will be saved. The new electronic ballast will last over 10 years and the existing ballast has a life of 12 years. The ballast manufacture industry says you will replace all standard ballast in a 12-year period of time. \$47,492 in savings over 10 years.

Incandescent (750 hours) versus pair lamps (4,500 hours)

4500 runtime hours divided by 750 runtime hours = 6 times longer
Current runtime for 52 fixtures is 1464 runtime hours a year. 1464 runtime hours a year divided by 750 rated hours = 1.952 change-outs a year x 3.07 years before change out = 5.99 change-outs less.

Incandescent

5.99 change-outs x \$12 for a lamp & labor x 52 lamps = \$3,737.76 of savings

182 lamps x \$12.00 labor and lamp cost x 19.52 change-outs in 10 years (with the new 20,000 rated fluorescent lamps there will be no change-out with the new program) \$42,631

New Lamps

4622 lamps replaced at a \$6.00 labor and material cost = \$27,732

We will conservatively say 50% of the lamps in the school would need to be replaced during the first 5 years.

\$27,732 divided by 50% = \$13,866 savings

Total Labor and Material Savings for Lighting

Ballast Savings	\$ 47,495
Pair Lamps	\$ 3,737
New Fixtures 20,000 hour rated	\$ 42,631
<u>New Lamps Savings</u>	<u>\$ 13,866</u>

Savings total

\$107,729

1.4 Guarantee Savings Measurement and Verification Plan

Provider offered Customer a variety of Measurement and Verification plan options. The Customer elected option, Option A, will result in a one-time report prepared by Provider. Provider will not provide an annual report or any report subsequent to the initial one-time report. Customer is solely responsible for annual reports to be submitted to the Department of Commerce.

1.4.1 Measurement and Verification Methodology(s):

Energy Conservation Measure	Electric Savings Verification Method	Fuel Savings Verification Method	Other Utility Savings Verification Method
Lighting	OPTION A	N/A	N/A
Water Conservation	OPTION A	N/A	N/A

1.4.2 Energy Cost Avoidance: The following describes the Measurement and Verification procedures, formulas, and stipulated values which may be used in the calculation of the energy cost avoidance.

Option A Verification – Lighting: The energy and cost avoidance are based on parameters and values as stipulated in the engineering calculations. Total annual energy savings associated with the implementation of these ECM's will be stipulated as achieved upon post-installation acceptance. The Energy Cost Avoidance achieved by the Lighting Retrofit is stipulated as:

For **East Elementary / Jr. High and Central Elementary Schools:** The savings is difference between pre-retrofit lighting wattage and the post-retrofit lighting wattage times the stipulated number of annual burn hours times the average \$ per kWh for the “last kWh purchased” during the Base Year. The weighted average \$ per kWh for the “last kWh purchased” is used because the PSI Rate Schedule “LLF” is a step tier schedule in which the cost of power varies each month with the amount of usage and the amount of demand for that month. For both buildings, four of the twelve months in the Base Year had a “last kWh purchased” cost of \$0.0517, while the other eight months has a cost of \$0.0460. This results in an average annual “last kWh purchased” cost of \$0.0479 per kWh. The calculated annual dollar savings is shown in Exhibit G 2.

For **West Elementary and High Schools:** The savings starts with difference between pre-retrofit lighting wattage and the post-retrofit lighting wattage. The wattage difference creates a reduced monthly electrical demand that is one of the two factors determining the electric bill. To be conservative, the savings calculations assume that this wattage reduction actually reduces only 10 months of the year and further assumes that only 85% of the reduction occurs at the time the billing demand occurs. This reduction kW demand is then multiplied by the WIN Energy REMC demand rate to determine the dollar saving. These calculations are shown in Exhibit G2. The other part of the savings occurs from the wattage reduction times the stipulated number of burn hours to determine usage (kWh) which is then multiplied by its WIN Energy REMC rate to determine usage dollar savings. These calculations are shown in Exhibit G2.

Verification of the Wattage Reduction: The guaranteed lighting wattage reduction will be verified by actual field measurement of a representative sampling of wattage levels before retrofit and again after retrofit. The samples measured shall represent at least 5% of total building wattage being retrofitted. Measurements have already been taken on representative samples of the pre-retrofit lighting in all four buildings. The results of these measurements are found in Exhibit G3. The averages determined from these samples were used as the basis for the “Before kW” figures found in Exhibits G3 and the room-by-room detail in Attachment A, Exhibit A1. This is a one-time verification.

Option A Verification – Water: The energy and cost avoidance are based on parameters and values as stipulated in the engineering calculations. These calculations are found in Exhibit G1. The water use (gallons/flush) values are based upon the standard manufacturer’s design values for the plumbing industry. Frequency of flushes was developed in conjunction with owner discussions. The complete calculation is shown in Exhibit G1.

1.4.3 Constants: The constants and/or stipulated values used herein, including Exhibits G1-G3, are agreed to be reasonable and may be used in the calculation of the energy cost avoidance.

**Exhibit G1
Schools
Calculation of Toilet Renovation Water Savings**

2-½ flushes/person/school day
180 school days/year
3.8 – 1.8 = 2 gallons/flush water savings

Water Savings = 2 ½ x 180 x 2 = 900 gal/person/year

Water Savings

<u>School</u>	<u>Student</u>	<u>Total</u>	<u>Gal/yr.</u>	<u>\$/1000 gal</u>	<u>\$/yr.</u>
<i>Jr. High</i>	595		685	626,500	\$1.02 \$ 629
<i>Elementary</i>	324	373	335,700	\$7.43	\$2,494
<i>High School</i>	529		608	547,200	\$1.96 \$1,073
Elementary	300	345	<u>310,500</u> 1,809,900	\$1.77	<u>\$ 550</u> \$4,746
Stipulated Guarantee Amount					\$4,746

Exhibit G 2
Schools
Lighting Savings Summary

Building	Before kW	Before kWh	Proposed kW	Proposed kWh	kW Saved	kWh Saved	
Jr. High	121.4	294,001	73.0	175,349	48.4	118,653	
Central Elm	83.6	217,028	47.6	123,386	36.0	93,642	
CINergy TOTAL	205.0	511,030	120.6	298,735	84.4	212,295	
CINergy DOLLARS					@\$.0479=	\$10,169	
Elem.	86.7	225,524	47.0	121,240	39.7	104,284	
High School	25.3	94,478	12.2	44,923	13.1	49,555	
WIN Energy REMC TOTAL	112.0	320,002	59.2	166,163	52.9	153,839	
WIN Energy REMC DOLLARS					@ \$7.00 x 10 x 85% =	\$ 3,146	\$ 5,434 @\$.035321

WIN Total = \$ 8,579

GRAND TOTAL =	\$18,748
OPTION A Guaranteed Amount =	\$17,716
Post Measurement Safety Factor =	5.5%

Exhibit G3 Schools

Elementary School

ROOM	FIXTURES		LAMPS		MEASURED			WATTS WITH	
	Type	Quantity	Total	Burnout	Volts	Amps	Watts	Total	per Fixture
#9	2L4F	19	38	0	285	6.33	1,804	1,804	95.0
#10	2L4F	19	38	0	284	6.60	1,874	1,874	98.7
#15	2L4F	15	30	0	284	4.89	1,389	1,389	92.6
#16 - Art	2L4F	15	30	0	284	4.98	1,414	1,414	94.3
							Total Watts	5,067	

AVERAGE WATTAGE - 2 Lamp Fixture 95.1

vs 86

High School

ROOM	FIXTURES		LAMPS		MEASURED			WATTS WITH	
	Type	Quantity	Total	Burnout	Volts	Amps	Watts	Total	per Fixture
102	2L4F	10	20	2	117	7.18	840	933	93.3
103	2L4F	14	28	2	117	10.48	1,226	1,320	94.3
104	2L4F	8	16	0	117	6.42	751	751	93.9
201	2L4F	15	30	0	118	10.59	1,250	1,250	83.3
202	2L4F	15	30	0	118	10.87	1,283	1,283	85.5
209 - Library	2L4F	8	16	0	118	5.92	699	699	87.3
LMC	2L4F	15	30	0	117	10.32	1,207	1,207	80.5
							Total Watts	7,443	

AVERAGE WATTAGE - 2 Lamp Fixture 88.3

vs 86

APPENDIX 6

Guaranteed Energy Savings Contract Annual Savings Report Form

This form should be used for reporting the savings on all projects performed under IC 36-1-12.5 regardless of contract start date. The form should be submitted to the Energy & Recycling Office no later than sixty (60) days after the end of each year the savings guarantee is in force. This annual reporting is required for the life of the contract.

Information on data entry for the reporting form is provided on the following page. Should you have any questions, please contact the Energy & Recycling Office at (317) 232-8940.

ANNUAL REPORT FORM - DATA ENTRY EXPLANATION

The following provides recommendations on the methods for calculating the data required in the GESC Annual Savings Report. Other approaches to calculating GESC data will be acceptable as long as they are consistent with the reporting requirements outlined in the GESC statute. Annual Savings Reports utilizing approaches other than those described below should be accompanied by a written explanation of the approach used.

- (A) **Baseline Constant:** This data should come from the utility bills or baseline utility consumption and operating costs for the 12-month period prior to commencement of the GESC project and should be identified as the Base Year utility data.
- (B) **Actual Post-Project:** This data should come from the utility bills or the measured energy consumption and operating costs for the 12-month period subsequent to completion of the GESC project.
- (C) **Adjustment:** This data should come from one of the following sources depending on the savings verification method specified in the Contract.
1. **Utility Bill Measurement:** If utility bill measurement savings methodologies are used to determine actual savings, then the data inserted into this box should be any adjustments for weather, occupancy, utility rates, increased ventilation to meet code, or any other variances that would effect the Baseline. The adjustment should be the adjusted baseline minus the baseline. It may be cost prohibitive to accurately determine the specific impact of each adjustment and therefore, an estimate based on whatever information is readily available is acceptable.
 2. **Measurement & Verification:** If measured & verified savings methodologies are used to determine actual savings then the data inserted into this box should be the savings that resulted from the measurement and verification analysis.
 3. **Stipulated:** If stipulated savings methodologies are used to determine actual savings, then the data inserted into this box should be the savings that resulted from the stipulated savings analysis.

*** Note: Provide attachment showing all assumptions (bill totals, measurement and verification, stipulations) and calculations used to determine C.**

- (D) **Savings:** Enter the difference between (A) and (B) plus C. This savings amount is the “true” savings after taking all factors into consideration.

**** Note: If Column A, B, or C is blank or the listed savings have not been calculated using actual utility bills and operating costs, the reported figures have been stipulated and represent an estimation of savings.**

- (E) **Guaranteed Savings:** Enter the amount that was guaranteed in the Contract.

- (F) **Difference:** Enter the difference between (D) and (E). This indicates by what amount the actual savings was exceeded or fell short of the guarantee.